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THE URBAN FUNCTIONS OF JEDDAH

- A GEOGRAPHICAL APPRAISAL

by

Osama Rashad Jastaniah, B.A., M.A.

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ABSTRACT

Jeddah is the second largest and one of the oldest established urban centres in Saudi Arabia. It first appears in written history as founded to be the main port for Islamic Makkah and this function has survived. The two main thresholds in the growth and development of Jeddah were the destruction of the city walls in 1947 and the national economic boom which came in the mid 1970's with rising oil revenues. In each case changes were associated with the effect on Jeddah of its position since the 1920's in the Kingdom of Saudi Arabia.

The first of the three major inter-related approaches contained in this study covers the general basic background of the study area, including the physical environment and resources in relation to urban functions, the historical evolution of the city since pre-Islamic times up to 1947 emphasising the continuity and levels of urban functions, and those aspects of population relevant to a consideration of urban functions.

The second approach is that of examining separately the main groups of functions i.e. commercial, industrial, service, residential and transport. Thirdly, in conclusion, an assessment is made of continuity and change in the balance of functions, together with a consideration of Jeddah's sphere of influence, regional, national and international.

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INTRODUCTION

"The power of growth of a town depends on its functional composition" (R.Dickinson - City, Region & Regionalism)

This thesis is essentially a conventional study of one of the classic, conventional aspects of urban life, i.e. the functional activities of Jeddah. Previous studies of Jeddah (as of many other Middle Eastern cities) have focussed on particular themes, such as urban morphology, planning or architecture, and this is the first attempt to examine the very basis for the existence of this and all other cities urban functions.

It has been generally established and accepted that Jeddah's "raison d'etre" is entrepreneurial. What has not been adequately assessed is the degree of continuity, balance and change during the 1378 years which have elapsed since the city's establishment by Caliph Uthman, and especially during the last forty years. One central theme of this thesis is that of continuity in overall functions but with changes of balance within the functional structure.

As discussed in Chapter 2, from its foundation until the 1920's Jeddah, as the chief port servicing the Holy Cities of Islam, was essentially a city living on the wealth generated by the urban community in supplying services and handling imported goods. As noted in Chapter 1, Jeddah's hinterland possessed no significant physical resources with which to supply the city. Within the city, its functional activities, institutions and forms were the unplanned resultants of myriads of individual entrepreneurial decisions, undertaken under conditions ranging from effective urban autonomy to

political independence. Exceptional was the short periods of limited external control by Mamluk Egypt and the Ottoman Turks.

After 1924-25 Jeddah became part of a large territorial state unified under the Sauds. However, not until the late 1940's and the rapid subsequent growth of oil revenues did this significantly affect the economy of Jeddah (see examples in Chapters 4, 5, 6, 7 and 8). From the 1950's onward the effect of the development of national bureaucratic administration by ministries, departments and other agencies, increasingly reduced traditional urban autonomy and Jeddah was no exception. From the 1960's onward and accelerating after the oil boom what happened in Jeddah increasingly became determined by national policies in an oil-rich unified state in which governmental decisions overlay or influenced the continuing private individual decisions. Now the city is no longer just a functional machine for providing locally commercially justified services but one which has become dependent on national revenue for "social engineering" in that public sector services (utilities, welfare, education etc) are supplied by central government revenue. At the same time the multiplier response in the private sector to state expenditure has affected not only production functions but also services such as health, education, hotel, restaurants etc. As a consequence of this, an enormous increase in public service employment has occurred in functional sectors such as administration, not only for the city but also for the regional hinterland including e.g. the Hajj, health, education and public utilities. This, of course, resulted in an increased demand for residential accommodation and goods and services for internal urban use. Therefore, the situation in Jeddah today can be summarily analysed as follows:

- a. Directly, large portions of Jeddah's functions are dependent on state expenditure and the national economy.

- b. Indirectly, large portions of Jeddah's private sector functions are also dependent on state expenditure and the national economy.
- c. There is a surviving core of long established private sector entrepreneurial skills and capabilities which are essentially viable because of the basic services they provide.

Many other cities of the Third World have become associated with one dominant activity and this perhaps may be particularly true of many cities of the Arabian Peninsula. Riyadh is the capital, Dammam services a great oil field province, Kuwait, which in many ways once had some of the characteristics of Jeddah as traditionally a trading and carrier port, and now has become dominated by finance. In Bahrain the city of Manamah has become dominated by off shore banking development. In the United Arab Emirates each city has become dominated by some particular historical activity e.g. finance, trade, service etc. In Saudi Arabia this dominant single function concept is being strengthened by the creation of Yanbu and Jubail as new industrial cities. In Jeddah, for a variety of different reasons, no preponderant single function has appeared. Because basic industrial development in Saudi Arabia, as with many other countries, has been dictated by a central government which has chosen for planning purposes two new centres, Yanbu and Jubail, manufacturing industry in Jeddah is important but not dominant.

In terms of finance and banking, Jeddah still remains very important in this respect but to some extent the growth of these functions is still limited by the ways in which very strict regulations are applied in Saudi Arabia on financial and banking operations. For example, unlike Bahrain, Saudi Arabia does not indulge in off shore banking. The flow of money is, in fact, strictly regulated by the Saudi Arabian Monetary Agency and Saudi Arabia still does not have a Stock Exchange.

The functions of Jeddah, as will be seen, have remained remarkably balanced in general terms, although the conquest of Hijaz by King Abdulaziz finally led to amazing growth and expansion. The review, by chapter, of the various groups of function illustrates how each has grown and encouraged the growth of the others. The rise of seaport activity resulted in the growth of commercial and industrial activity, the development of the airport is in a sense an extension of sea traffic and, finally, Jeddah still remains the greatest single gateway to Saudi Arabia in terms of goods and people. It is therefore apparent that for all the great rapidity of change in this part of the world one can say that Jeddah remains a classic whole city.

The main objectives of this thesis are therefore to explore what lies behind this appearance. Firstly, to try and establish by using the various but limited types of data which are available, the size and characteristics of the city's main functions as they are normally classified. Secondly, to try and evaluate how these functions reflect on one hand the indigenous activities of the city itself so far as these can be isolated, and on the other hand how the functions of Jeddah reflect its functional relationships with its hinterlands at various scales. The latter relationships take several forms; one of them is in terms of the balance of functions created by national wealth. Another is the way in which Jeddah remains the major importing centre and the major conduit through which imports draw into the country.

So one is therefore measuring the size and characteristics of the functions of Jeddah in terms of the city itself, the city in relation to its region, the city in relation to the nation and lastly, in relation to the world at large. In order to do this one has to examine each of the main functions in detail and this is done in

Chapters 4, 5, 6, 7 and 8, an attempt being made to build up a cumulative pattern of the whole.

Unfortunately, comprehensive and detailed information on many aspects on the urban functions of Jeddah is either lacking or too inadequate to provide a useful basis for analysis. For example, most of the data published by government Ministries' departments are concerned with the country or the region as a whole, which makes it difficult to obtain specific data concerned with individual cities such as the study area. There are very few and no comparative data available for employment in most of the major public sectors, such as administration, education, industry, services etc. No published figures exist on the scale of economic activities and no data on rentals or the land prices. Moreover, figures published by several government departments do not agree with each other since there is no cooperation between them in regard to what they publish. Most published data often regard the city itself as a part of the administrative region. Others do not specify whether these figures concerned the region or the city only. Finally, the statistical time series data either concerning Jeddah or the whole country, essential for establishing trends, are few in number, short in extent, rarely comparable over time or simply are not available.

Government published data do provide some basic information for this study such as, firstly, the Ministry of Industry and Electricity's Survey of industrial establishments, although it must be recognised that in many cases the distinction between industrial establishments and trading establishments is very dubious since they may not only process but also handle imported goods. Secondly, the Ministry of Finance, Central Department of Statistics Publications, particularly the Census and Survey of private establishments and several issues of the

Statistical Year Book (1965-1981) are relatively useful for this study. Thirdly, publications of the Ministry of Petroleum and Mineral resources, including some useful geological maps and aerial photographs of old Jeddah. Finally, the Master Plans of 1971 and 1978 for Jeddah and the Western Region, prepared by different foreign consultants are also used in this study. Interviews with some officials in government offices were of great help and from these access was obtained to some unpublished reports.

In addition to the above mentioned data, the author had to rely on fieldwork and sample surveys in order to deal with the problem of shortage of detailed published data. Three periods of fieldwork and sample survey have been carried out by the author, the first carried out during the summer of 1981 and designed to collect any available data in the Ministries in Riyadh and government offices in Jeddah. The major part of the fieldwork was conducted during the second field trip in the summer of 1982 and included field research on particular functional, industrial and financial establishments (where this was possible). This also included detailed sampling of the CBD as one of the most important districts for wholesale, retail and financial services and extended to cover the spatial interrelationship between the functions, and how they were distributed throughout the city. The third period of the fieldwork was held in the summer of 1983, during which residential quarters of the city and the squatter settlements have been surveyed. A survey in cooperation with the Municipality, University branch, in all the squatter settlements of the eastern side of the city was of great help to delimit the boundaries of these settlements and to understand the nature of this problem. The author was born in Makkah (73 km from Jeddah) and brought up in Jeddah and drew on his personal knowledge of the city and his experience of recent urban development events.

The morphology of the city is not in itself directly relevant to this thesis, but in some respects is of indirect relevance. For example, the presence of particular concentrations of specialised land use, the delimitation of the CBD, the communication network, and residential quarters are significant because they indicate the range and the strength of the functions of the city.

Throughout the thesis, emphasis has been placed on the influence of the 1973 oil boom which can be considered as the second main threshold in the development of Jeddah's functions. Of course, the first turning point in the history of Jeddah came in 1947 and is typified by the demolition of the city walls.

The thesis consists of an introduction followed by Chapter 1 devoted to establishing Jeddah in its physical setting, in particular to see how this may have influenced the growth and the balance of functions. In Chapter 2 a historical overview is provided to give a time context to the matter of continuity and change in balance of functions within Jeddah. Particular attention is drawn to particular characteristics of its historical functions and some influence on them including a note on the importance of Hajj. In Chapter 3 the question of continuity in time as well as providing the first analytical indicators of urban functions appear from a study of Jeddah's population. From Chapters 4 to 8 the functions of Jeddah are examined sectorally, both in terms of structural characteristics and also where relevant, the question of their location in the city. Some particular concepts of significance which appeared from earlier previous analysis are then developed in Chapter 9. These include the question of centripetal and centrifugal force, how far classic urban models can be applied to Jeddah, the changing balance of the functions throughout the history of Jeddah, the role of the city in its region and state and finally Jeddah as a world city. From these last discussions the significance and importance of Jeddah as a maturely balanced functional city clearly appear.

CHAPTER 1

PHYSICAL SETTING

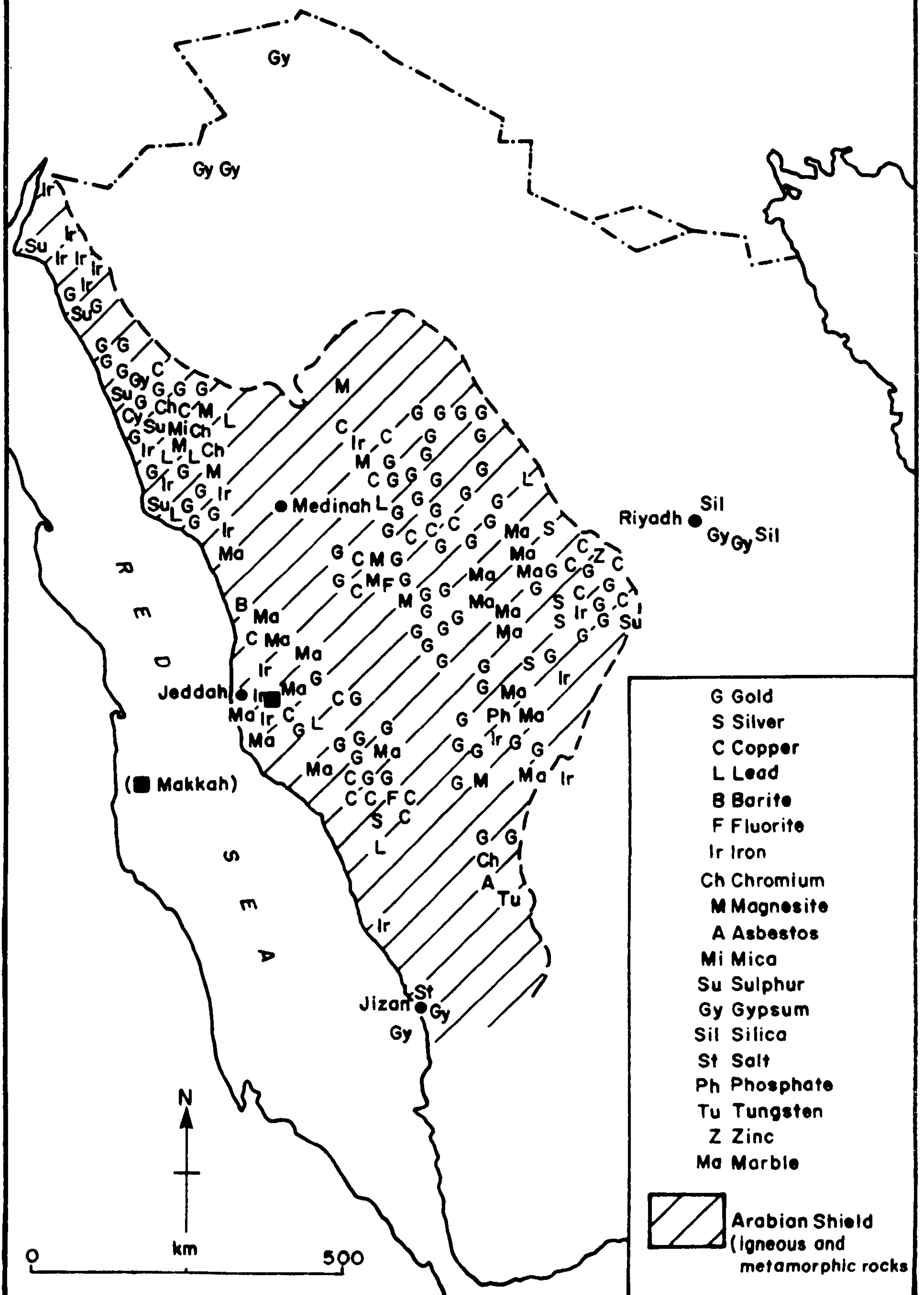
This Chapter is concerned with the relationship between the physical setting and the functions of Jeddah. However, all urban settlements will have some positive and some negative aspects in the relationship between the local resource base, the local site topography and the location in respect of regional or wider resources and topography.

Geology

There are some elements of geological structure and lithology of the region in which Jeddah is located which have a direct bearing on its functions. Jeddah lies on the western edge of the Arabian shield, composed originally of a great variety of rocks, sedimentary and igneous, which were subsequently metamorphosed, shattered by faults and fractures, and traversed by intrusions of magma (lava) ⁽¹⁾ (Fig. 1.1). In much of the Western Region, harra, Tertiary lava flows under arid conditions, have extremely negative effects on land quality for agriculture.

In terms of the consequent economic geology within the Western Region there are potential deposits of mineral resources, both metallic and non-metallic. The regional metalliferous mineral deposits are iron, copper, lead and zinc sulphides, commonly associated with gold and silver ores that reach commercial grades in some places. Some of these minerals occur in the coastal belt between the Shield and the Red Sea. ⁽²⁾ (Fig. 1.1). However, the most important deposit economically near Jeddah is oolitic iron ore. This is found in Wadi Fatimah 45 km. from Jeddah, occurring as oolitic hematite and

Fig 1-1 GEOLOGY AND MINERAL DEPOSITS OF THE ARABIAN SHIELD



Source: Compiled from the The Kingdom of Saudi Arabia and Third Development Plan

goethite of sedimentary iron oxide. Over fifty million tons of oolitic hematite, containing nearly 45 per cent of iron, is inferred to be present. (3)

In this context, one should bear in mind that such regional mineral wealth in traditional economics only affected Jeddah basically in terms of trade. As far as extractive industries are concerned Jeddah has never had any important sector devoted to mining or processing of local minerals. Recently there has appeared a new potential regional activity as part of an agreement between Saudi Arabia and Sudan for the offshore exploitation of seabed minerals using totally new technology. The Red Sea itself may be a source of mineral wealth, but this has no bearing on Jeddah directly, except that Jeddah and other ports along the Red Sea may serve as the service bases for offshore activities.

In addition to metallic deposits, non-metallic deposits with economic potential, such as good quality marble for ornamental and building purposes, also occur in the Western Region and within a reasonable haulage distance from Jeddah. The main areas are Jabal Farasan, Wadi Missir and Wadi Rabigh. At Jabal Farasan marble has little variation in colour and overall reserves are very large, the exposures examined ranging in size from 25,000 to 50,000 cubic metres, up to several million cubic metres in all. At Wadi Missir, about 100 km. north-north east of Jeddah, marble is generally light in colour, white and light grey being the most common, but there is also pink, red and green. Quarryable reserves are between 25,000 to 50,000 cubic metres. Finally, in the Rabigh region, 120 to 180 km. from Jeddah, there are several non-metallic useful deposits. Limestone, outcropping in an area of some 50 sq. km, can be used for building purposes, supplying primary materials for the manufacture of cement, or

possibly used for soil improvement. Red and beige coloured clay found in large, easily accessible deposits at Wadi Rabigh can be used for the manufacture of cement and bricks. A small occurrence of gypsum also crops out 15 km southeast of Rabigh and can be utilized in the manufacture of cement and plaster. The cement factory in Jeddah on the Medina Road now obtains all its raw materials for manufacturing cement from the Rabigh area. In addition to this, there are some deposits of black, white and beige marble, having occasional ribbony patterns, located south of Wadi Fatimah as the closest area to Jeddah. The quality of the marble is average with visible reserves of around 300,000 cubic metres.⁽⁴⁾

It is clear from the foregoing that, although there is some potential for mineral resource exploitation within the Western Region, there is no such potential within the immediate vicinity of Jeddah which could have given, or could give, rise to any important mining or processing of local minerals in, or near, the city.

Topography

Jeddah is sited on a coastal plain lying between the high west-facing scarp and the Red Sea. The scarp, known as the Hijaz mountains, reaches a height exceeding 2,000 metres to the south-east of Makkah, but is less continuous, less precipitous and lower towards the north. The western slopes of the mountain north of Jeddah are less steep than those of the south. Within the scarp highlands long valleys extend from north to south from which the drainage eventually breaks through to the Red Sea in a few important wadis, e.g. Wadi Hamdh, Wadi Yanbu, Wadi Rabigh and Wadi Fatimah (Fig. 1.2). The ephemeral wadi flows rise in the broken plateau of Hijaz which includes many harrat (Fig. 1.3). Then immediately to

Fig 1-2 MAJOR WADIS IN JEDDAH AREA

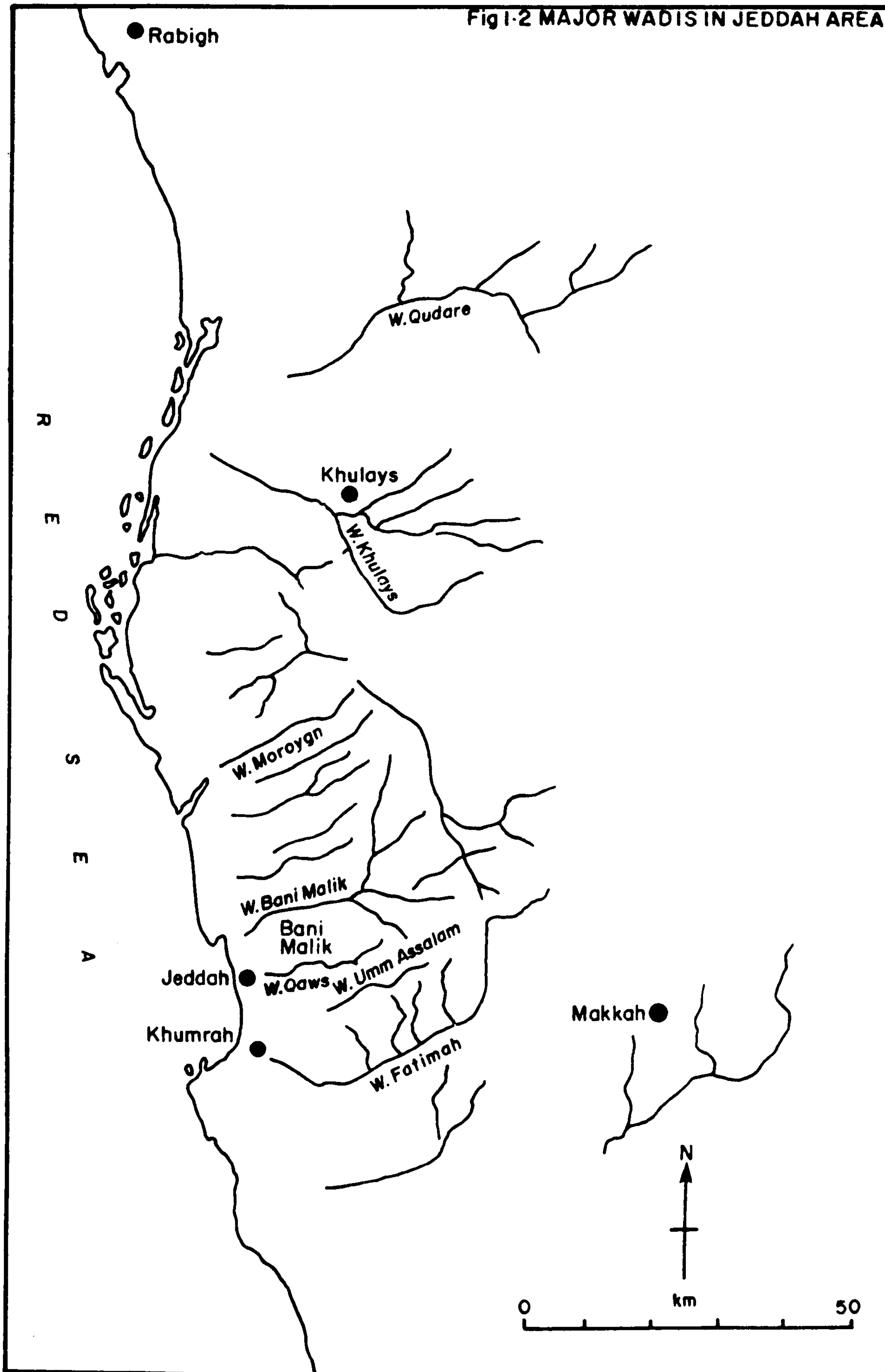
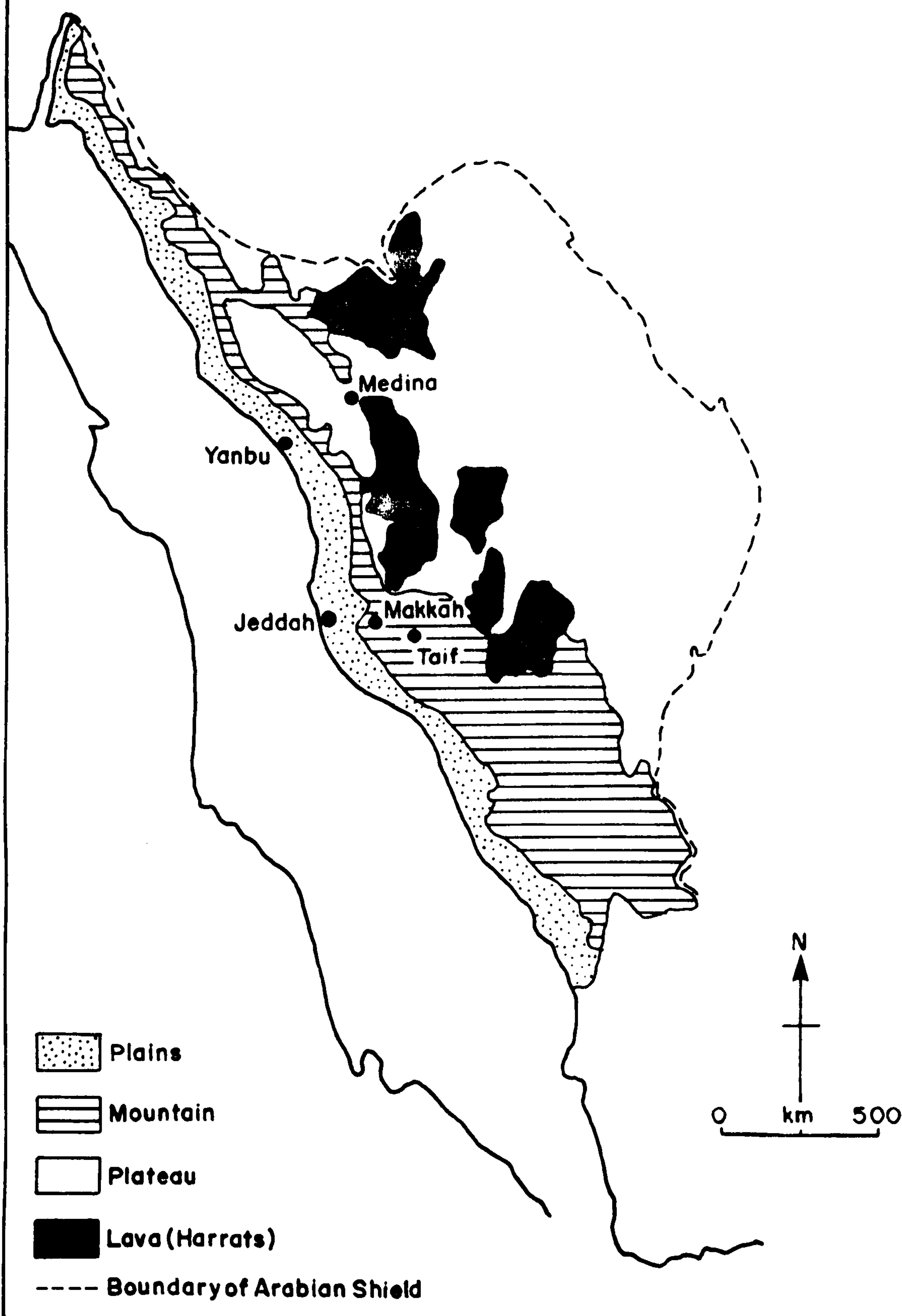


Fig1.3 MAJOR PHYSICAL FEATURES IN THE WESTERN PART OF THE KINGDOM OF SAUDI ARABIA



the west is a formidable succession of outlying high plateaux with steep scarp edges dominating Tihama below. The coastal plain itself, known as Tihama (the hot place) varies in width from 30 to 40 km. between Jizan and al-Leeth, 15 to 30 km south of Jeddah, shrinking to nothing at the Gulf of Aqaba (Fig. 1.3). At Jeddah the plain is large enough to accommodate space requiring activities such as an international airport (see Chapter 8). The shore is generally flat, but in several places creeks sharm and valleys penetrate the land (Fig. 1.2) such as Sharm Abhur (about 40 km to the north of present day Jeddah) and Yanbu (about 350 km north of Jeddah). Since practically no floodwater flows into the sea, coral grows in these inlets which in less arid countries would only be found in the open sea. (5)

The characteristics of terrain and topography have strongly influenced human life in the region. The arid and rugged highlands have served as barriers to communication between communities and strongly canalised movements of people and goods. They also, indirectly, through their influence on the climate, the availability of ground water and surface flow, have influenced the growth of communities and the prospects for agriculture.

The site of Jeddah in terms of coastal configuration and suitability for shipping is no more attractive than many other sites on the coast. One major favourable factor is the presence east of the coastal plain in the vicinity of Jeddah of a group of relatively easy passages across the scarp into the interior. Used in pre-Islamic period, these have become especially important since the rise of Islam as Makkah, lying to the interior of the scarp, became an international centre of pilgrimage and worship. Jeddah's growth

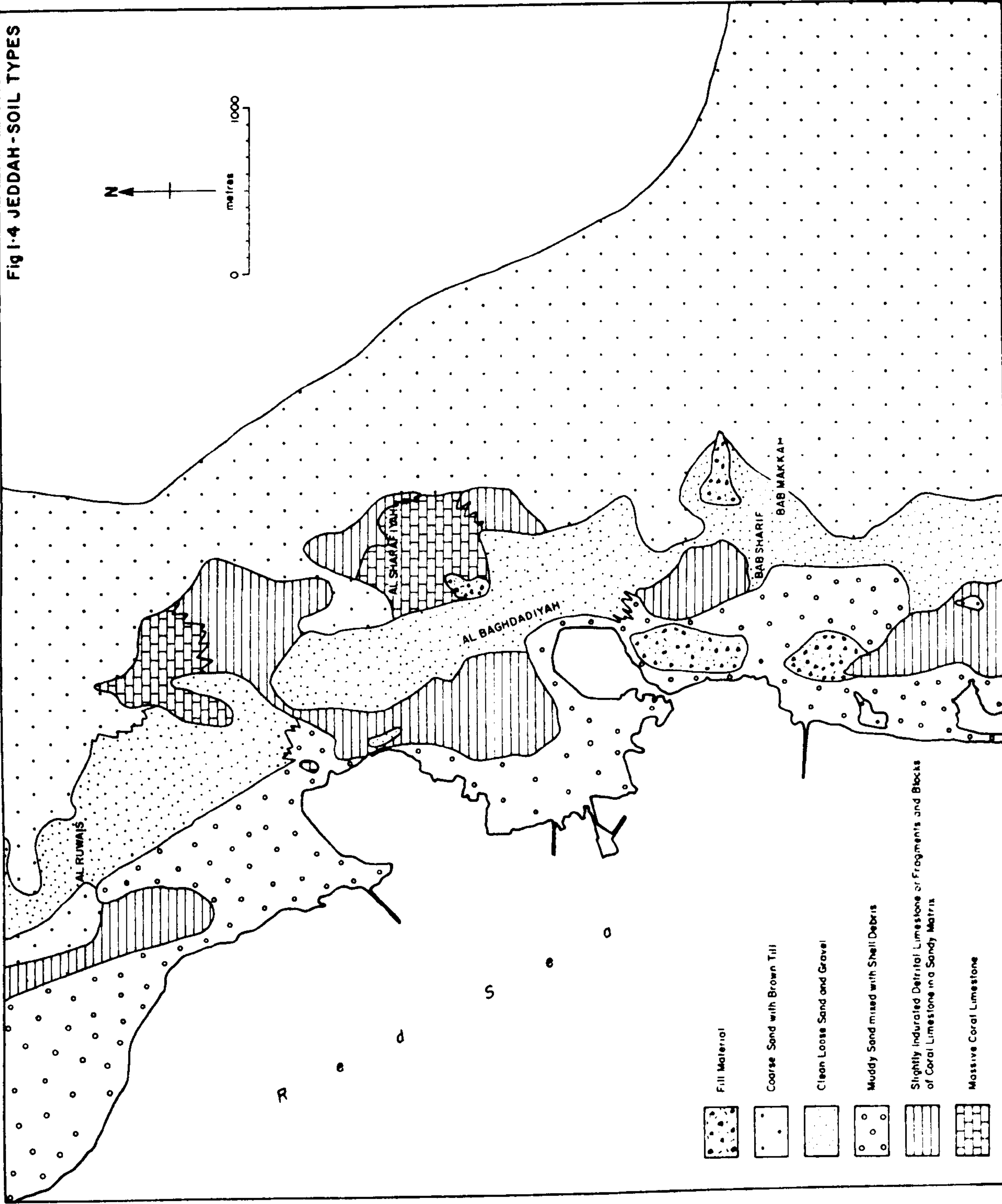
really became significant as offering reasonable harbour facilities to seaborne pilgrims who then travelled inland via the relatively easy wadi routes opening to the east.

Nothing in local site terrain either encourages or discourages any particular type of activity in Jeddah. The height of land varies from zero near the sea on the west to about 15 m to the east. The hills in the vicinity of Jeddah rise from 100 to 150 m. The hills are dissected by four wadis, Wadi Umm Assalam, Wadi Qawaz, Wadi Hefna and Wadi Bani Malik (Fig. 1.2). These wadis range in width from about 100 to 400 m and converge on the city. Some wadis are now almost obscured and others start to meander and disappear about 4 to 5 km away from the present shore line, this being due to the recent alluviation of the wadi fans. ⁽⁶⁾ Just before the wadis merge on the plain, alluvial deposits have been formed which sometimes carry small aquifers of local interest.

Between the main escarpment and the coastal plain are the foothills which form a relatively continuous series of outliers from the Saudi Arabian massif. Around Jeddah there are some undeveloped sandy areas which, together with the hills and foothills, have generally restricted the eastward expansion of the built-up area until very recently. They have had some effect on route alignment as with the new motorway to Makkah.

The most important feature of the topography of Jeddah is the Coastal Plain or Tihama itself mentioned earlier. The width of this plain north and south of Jeddah is about 15 km. The soils in the plain of Jeddah vary in type and in distribution (Fig. 1.4), but in the city area can be classified as falling into three groups, each having its own characteristics. First, the coastline consists of

Fig 1-4 JEDDAH-SOIL TYPES



muddy sand mixed with shell debris. This type of soil has bad mechanical characteristics, especially when associated with a locally high water table. Secondly, the central part of the city (Al-Hindawiyah, Bab Sharif, Al-Baghdadeya and Al-Ruwais quarters) lie on clean, loose sand and gravel soils. These lack any cohesion and their thickness averages some 2-3 m. Thirdly, in the eastern part of the city and along the Makkah road soils consist of coarse sand with brown silt, generally compacted and having good bearing strength. (7)

The coastal zone of Jeddah has a width of about 1 to 2 km. The coastal area has some fine beaches especially in the southern part which could be a potential setting for recreation in the future. To the north lie creeks, sherm Ubhur, penetrating up to seven miles inland. These deep indentations also provide a landscape of potential recreational attraction (see Chapter 6). One topographical feature in the coastal plain which has to some extent affected drainage is the presence of some enclosed depressions where, especially within some of the old built-up areas, rain waters accumulate causing local flooding, transport disturbance and an unhealthy atmosphere (see Chapter 6).

In short, whilst the physical character of the area in which Jeddah is located may be regarded as the decisive factor which determined the shape and direction of Jeddah's traditional growth, the topography of the site of Jeddah has not had any clearly restrictive effect on the expansion of the built-up area or on any of its sectoral functions. However, the absence of any extensive areas of land capable of supporting cultivation or even much pastoralism, together with the negative effects of geology and climate, has meant that Jeddah may be regarded as extremely deficient in any local resources for its support.

Climate

Jeddah lies in a coastal desert region lying just south of the Tropic of Cancer in which seasonal effects of air mass movements producing seasonal variations in climate. Local topography plays an important role in air convection movements and the resultant thunderstorms occurring along the escarpment ridge during the spring, early summer and early autumn. (8) Trewartha therefore defined the climate of coastal deserts as a separate type which has its own specific characteristics. (9)

Rainfall

Jeddah is located in the Western Region which is characterized by very sparse rainfall. The city is mostly subject to winter and spring rainfall brought by southerly winds from the Red Sea, leaving the summer months dry and hot. The mean annual rainfall of Jeddah is 73.8 mm. The average monthly rainfall in Jeddah between 1957 - 1979 is as follows (see Fig. 1.5) :

J	F	M	A	M	J	J	A	S	O	N	D
21.5	10.6	1.1	7.8	2	0	.5	0	0	0	14.3	16

Source : Meteorology Department, Climate Section.

In an arid area like Jeddah, the mean annual rainfall has little meaning if compared with the amount of rainfall within days or months. For example, in December 1972, 129 mm fell and in January 1969, 124.7 mm. The dominant characteristics of rainfall in such years is for it to fall in torrential bursts lasting no more than a few hours. Water run-off is then very rapid because of the limited amount of vegetation. Rainfall is usually regarded as being essential and

**Fig 1-5 MEAN MONTHLY RAINFALL
1957-1979**

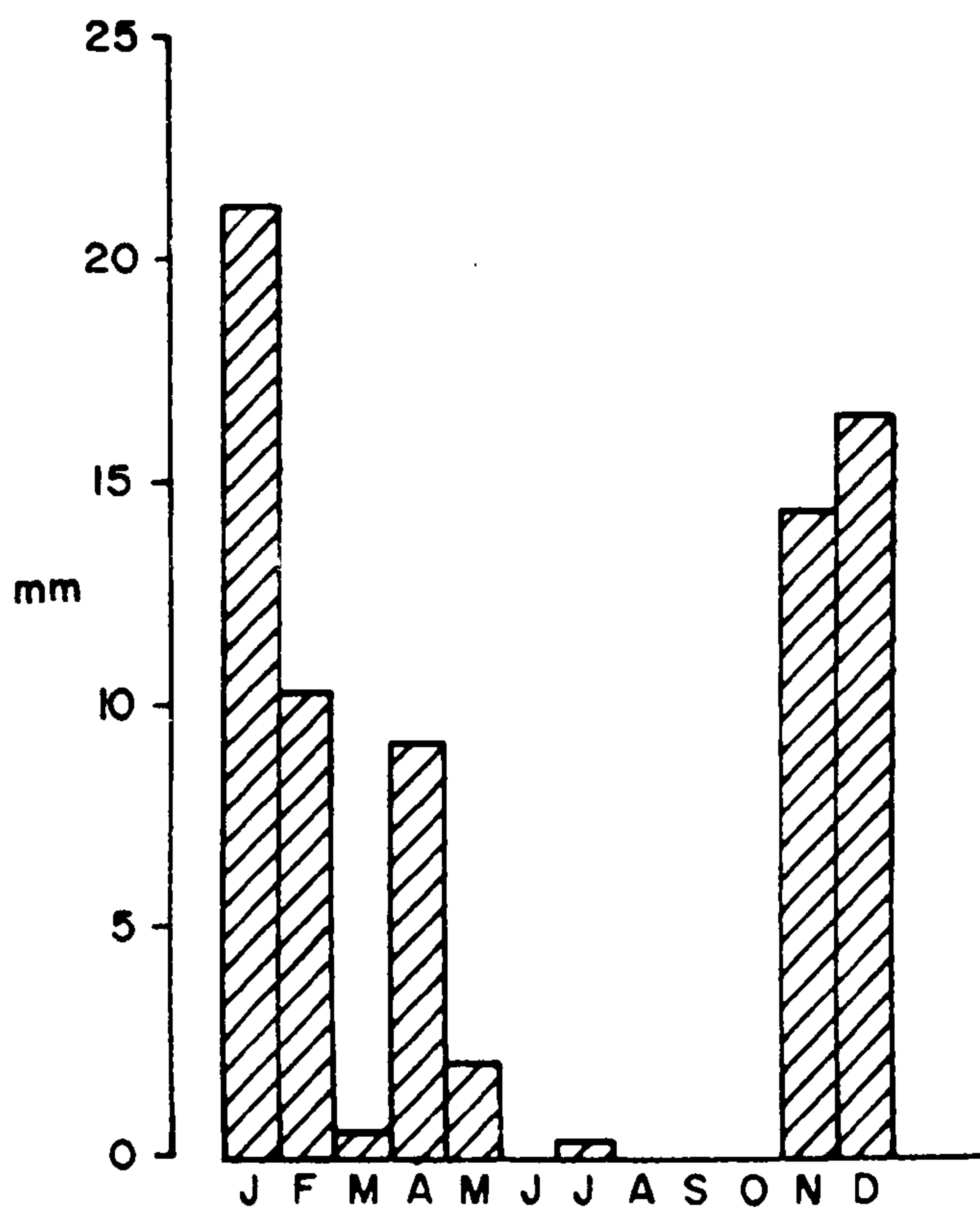
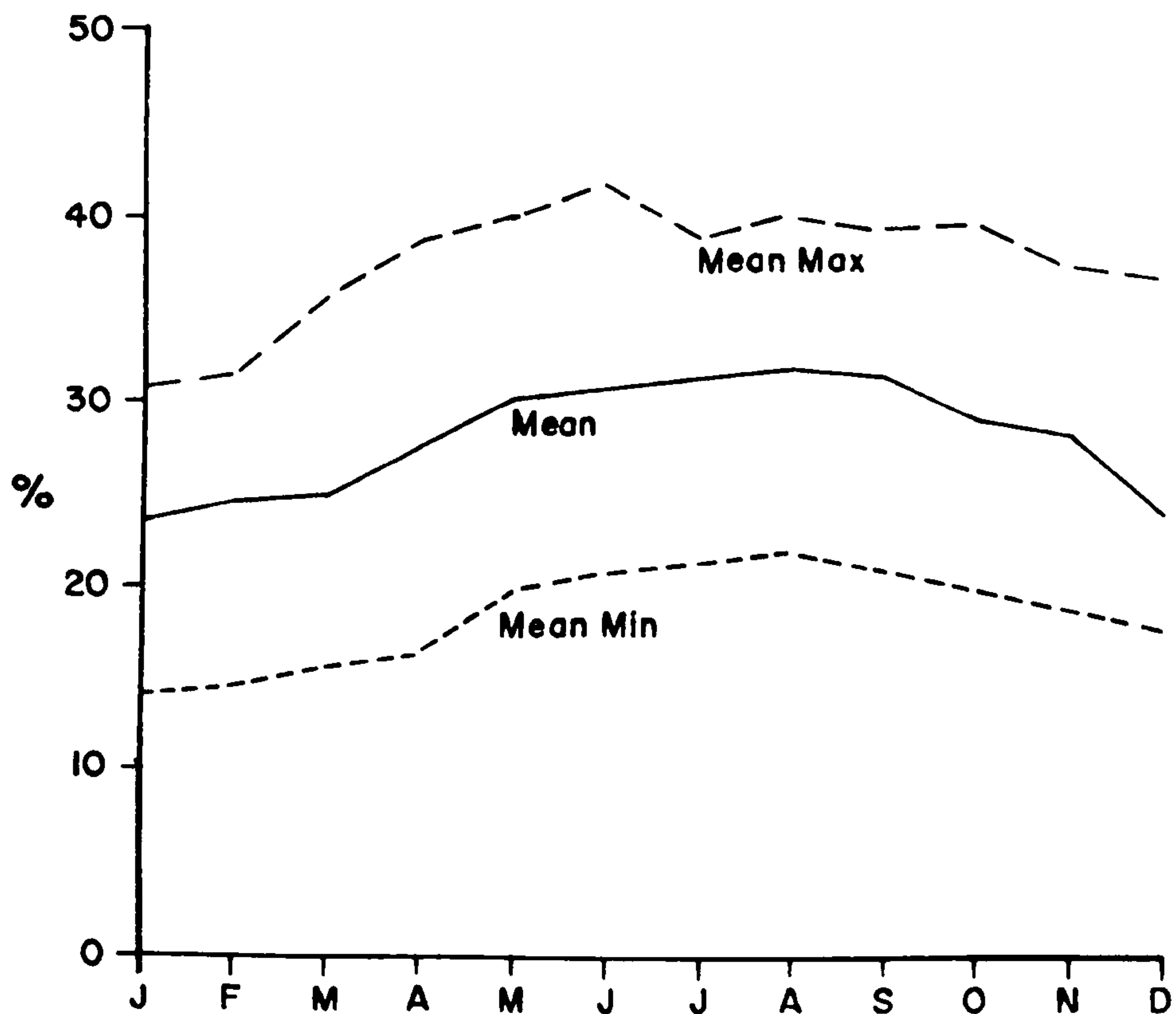


Fig 1-6 MONTHLY MEAN TEMPERATURE 1966-1979



necessary for life, but unfortunately in Jeddah it has caused problems. Periodic heavy concentration of rainfall produces locally channelled flooding which has had some influence on the detailed siting of buildings. Recently, as municipal services have been developed to protect the city from such flooding there have been constructed storm water ditches and interception systems. However, the lowest areas, especially in the old parts of the city, still have to be pumped to discharge against sea level. ⁽¹⁰⁾ Such local water flows affect planning in general but are not of any special significance to the functioning of Jeddah.

Other Climatic Characteristics

Temperature, humidity and wind, in combination, produced some traditional local responses in types of buildings (see Chapter 2). In modern Jeddah the response has been to create artificial environments for urban activity through air-conditioning with consequential effects on architecture. Therefore, there is now critical dependence on one public utility, electricity, since modern Jeddah, dominated by office and commercial activities, would not function without air-conditioning given the situation summarised below.

Temperature

The temperature on the coastal zone on which Jeddah is situated is modified by the proximity of the Red Sea which, in summer, is a cooling influence whereas in the winter the situation is reversed. The distribution of the mean monthly temperature between 1966 - 1979 is as follows (see Fig. 1.6).

	J	F	M	A	M	J	J	A	S	O	N	D
Mean	23	24	25	27.5	30	30.6	31	32	31	29	27	24.6
Max.	32	33.2	36.5	38.7	40	42.8	38.4	40.4	39.8	39.6	35.4	33.2
Min.	14	14.7	16	17	20	22.5	23.5	23.8	22.6	20	18.5	15.5

Source : Meteorology Department, Climate Section.

A comparison of the mean monthly temperature with the maximum temperature shows some variation. The highest maximum temperature of 49°C was recorded at Jeddah in June 1979, the highest on record for Jeddah since 1966, the previous one being 48.4°C recorded in June 1977.⁽¹¹⁾

Humidity

Jeddah has high average relative humidity, especially during the summer months; such a relative humidity caused by moist monsoon air can reach 100 per cent. The distribution of the mean monthly relative humidity during 1966 - 1979 is as follows (see Fig. 1.7):

J	F	M	A	M	J	J	A	S	O	N	D
61	60	58	57	58	60	56	59	69	67	62	60

Source : Meteorology Department, Climate Section.

High humidity in summer, together with high temperatures, discourages physical activity particularly in urban confines. The closure of shops, markets, offices and the emptiness of city streets are common at midday. The situation is reversed after sunset when streets and markets are crowded with cars and people. The introduction of air-conditioning is now beginning to modify this daily regime.

Fig 1-7 MEAN MONTHLY RELATIVE HUMIDITY 1966-1979

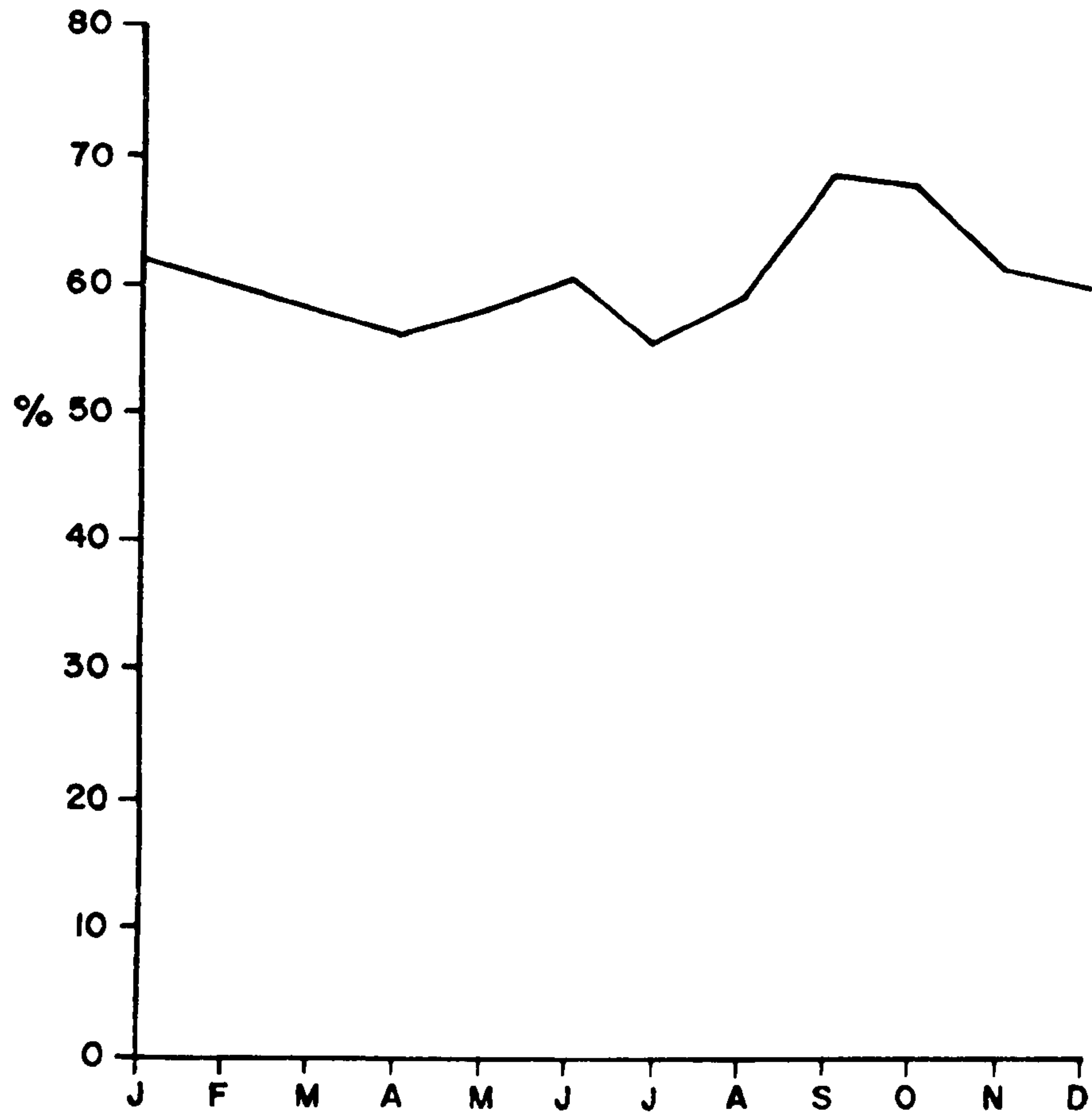
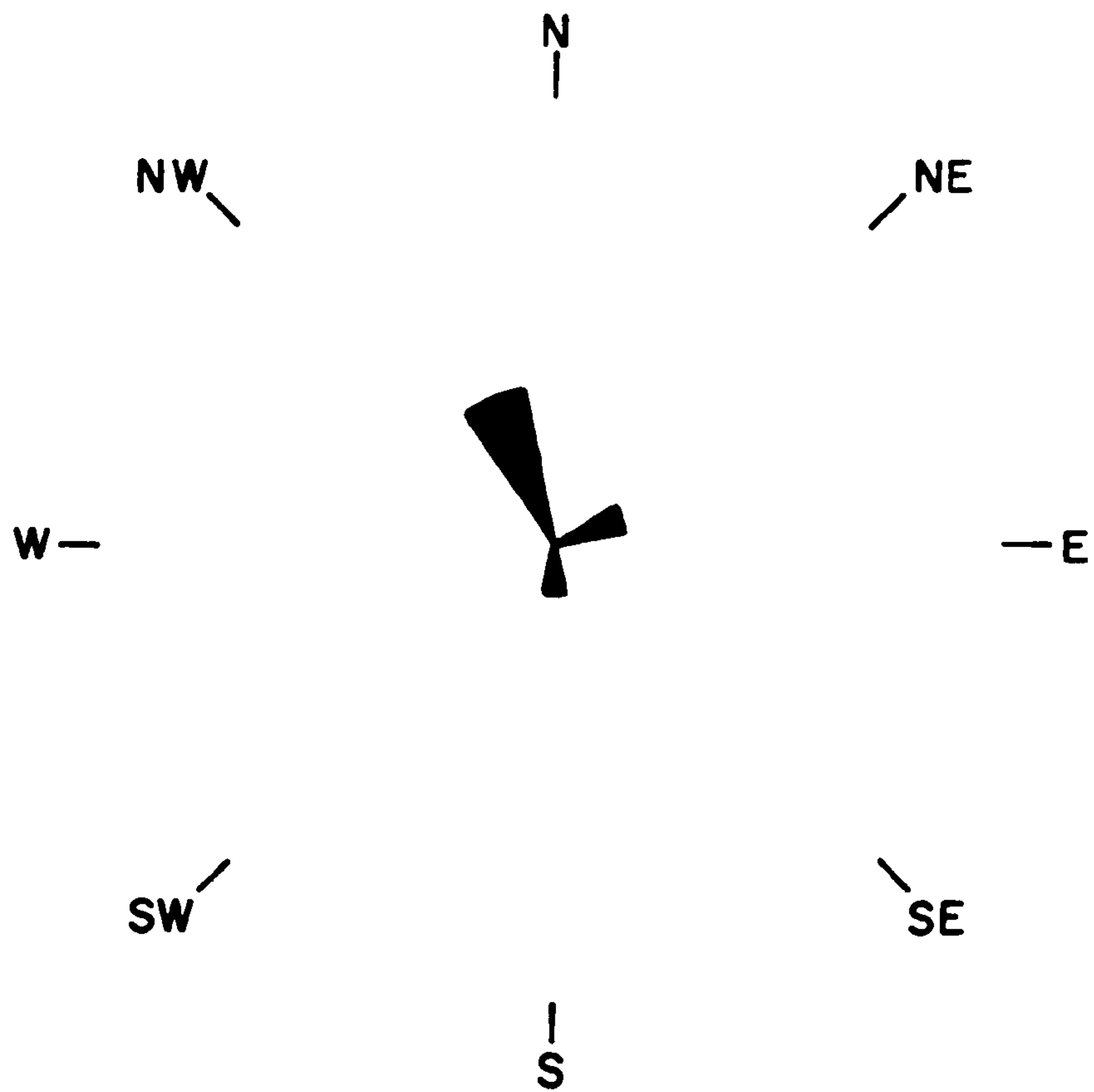


Fig 1-8 WIND ROSE



Wind

The most common winds and those preferred by people are from the north-north west which account for about 36 per cent, the north-west wind known locally as al-bahari and the north known as al-shami. One of the advantages of the north wind is the reduction of the temperature in the summer months. ⁽¹²⁾ This directly affects the price of the land, making that which is open to the north-north west winds of higher value than the remainder (see Chapters 4&7). The other types of winds, preferably avoided by people, are the southern wind, known locally as al-yamaniya wind which blows for 10 percent of the time, and finally the east-northeast wind blowing for 17 per cent of the time. This latter is usually a source of storm dust. ⁽¹³⁾ In general, wind has an effect on city layout and design, being exploited as natural air conditioning to reduce temperature and excessive humidity. ⁽¹⁴⁾ (see Fig.1.8)

Other climatic elements such as fog, dew and hail occur very rarely and their effect on the life and activities in the city are very slight.

Water Resources

It cannot be claimed that the permanent problem of deficiency and uncertainty over water supplies has had any specific constraining effect on the growth and functions of Jeddah before the introduction of modern techniques to improve supplies. Nevertheless as all records show, the perpetual problem of water shortage has long loomed large in everyone's consciousness and gave rise to some particular institutional functions. In modern Jeddah the water supply problem has only been overcome through the deployment of national oil wealth which, through national agencies such as the SWCC, has created new water resources.

Water supply for cities has become one of the geographer's main interests, especially in areas of rainfall variability. The development of an adequate water supply is a growing problem confronting Jeddah and many other municipalities, especially in this age of rapid metropolitanisation. ⁽¹⁵⁾ In earlier periods both the difficulties resulting from water shortages and the methods used partially to overcome them, are considered in Chapter 2. The aim here is to illustrate the water situation in Jeddah since 1947.

The Existing Water Supply

The water supply in Jeddah is the responsibility of Ain Al-Aziziah administration, an institution rooted in the past. Water comes from three sources; Wadi Fatimah and Wadi Khulays groundwater and the desalination plants. In addition, there are a number of small private desalination plants at Al-Saudia City (see Chapter 7) King Abdulaziz Airport (see Chapter 8), Jeddah Port and the refinery area.

1. Wadi Fatimah

It is estimated that at peak there were about 360 flowing springs, ains, in the wadi which supplied Jeddah with its water needs; most of these are now dry as the result of intensive use. ⁽¹⁶⁾ By 1955 only seven or eight wells in the lower Wadi Fatimah were available to supply Jeddah. The following table illustrates these ains.

Table 1.1 : Number, Depth and Locations of Wells in Lower Wadi Fatimah

Area name	No. of wells	Total Depth (m)	Height above sea level (m)
Abu-Erwah	1	4.57	250
Fawriah	1	8.9	259
Douh Al-Kabir	1	9.2	155
Ali well	1	-	-
Hadduh	3 or 4	4.6-9.2	125

Source : Berg E.L. (1944) Preliminary Report on the Water Resources and Geology of the Jeddah - Usfan Wadi Fatimah Area. U.S.A. Army Mission in Saudi Arabia in cooperation with Aramco.

Depletion of groundwater caused serious deterioration in the quality as well as the volume of water. According to a technical report issued by the Authority (no date)

"we cannot depend on spring flow in Wadi Fatimah to provide growing cities like Jeddah and Makkah with a dependable source even when the rainfall is adequate." (17)

Water was carried by pipeline, later replicated to several reserve reservoirs, the purpose of these being to supplement the normal flow at times of high demand and to allow purifying treatment. The total reserve capacity of the reservoirs reaches 16 million gallons. (18)

The quantity of water delivered to the city from Wadi Fatimah was increased dramatically from 1.2 million cubic metres a year in 1950 to almost 24.6 million cubic metres in 1977. Since then the volume has declined to 18.4 cu.m. in 1980, (19) and will continue declining until no further water is extracted from Wadi Fatimah, at which time the fourth stage of the desalination plant starts full production.

2. Wadi Khulays

Several studies were carried out in the environs of Jeddah to find another source of water besides Wadi Fatimah, and these recommended extraction in Wadi Khulays. Pipelines from Wadi Khulays finally reached suburbs of Jeddah 165 km away in 1965. (20) Groundwater storage within the basin is estimated to be some 35m.cu.m and because recharge is high relative to extraction rates, water quality is superior to that of Wadi Fatimah having 600 ppm (parts per million) of salts, while Wadi Fatimah water has 1,000 ppm of salts. However, the quantity of water delivered to the city from Wadi Khulays is less than that delivered from Wadi Fatimah, 7m.cu.m. in 1971 rising to 8.1 m. cu.m in 1980.

3. Desalination

Water supply to the city of Jeddah reached a critical point during the 1960's as a result of a sharp increase in population, the vast expansion of construction and rapid industrial development, which together created an increasing demand for water and power which the existing sources at Wadi Fatimah and Wadi Khulays could not meet. It was therefore necessary to supplement this groundwater supply with an alternative source of water.

The Saudi Arabian government during the 1960's considered the desalination of sea water as an alternative supply of fresh water and in 1967 the government established an independent General Desalination of Sea Water Administration in Jeddah. This department later became the Saline Water Conversion Corporation (SWCC) and in 1975 its headquarters were transferred to Riyadh, the capital city when it became a national agency. Jeddah's desalination plant was the largest of its kind in the kingdom. (21)

Present long-range plans assume that desalted water will replace groundwater for municipal and industrial use wherever and whenever possible so that the natural resources can be used for irrigation. (22) For example, after the operation of the first desalination plant in the city, only 38 per cent of the municipal requirements were supplied from Wadi Fatimah and the rest was released for irrigation and other uses. (23) Three of the four stages in desalination plants were completed by 1979; Stage Four, planned as the largest plant ever built in Saudi Arabia with a capacity of 50 mgd was completed in 1982. (24) In addition to these in 1978 the SWCC bought a small reverse osmosis plant with a capacity of 3.5 mgd.* The total water supply by SWCC to Jeddah in 1981 was 88 mgd in addition to 820 Mw of electric energy. (25)

Future sources of supply

Several ideas have been raised by SWCC and other groups in order to meet the future supply of fresh water, many of which are based in one way or another on the importation of water. One such proposal which has received much publicity is to exploit fresh water locked up in icebergs in the Antarctic. The icebergs would be towed to the west coast where the fresh water from the melting ice could be piped to the towns and cities. It is hoped that the cooling effect of the large, cold surface would affect the desired micro-climate and the floating ice berg would cause the condensation of atmospheric water, adding about 25 per cent to the yield of fresh water produced from the ice melting. It is estimated that the cost of melting, storing and piping water from icebergs would be a tenth of that of desalinating sea water. (26)

A similar idea, that of bringing water from abroad, has also been considered. Water could be imported from Yokashima Island in

* mgd = million gallon a day.

Japan by using oil tankers. This idea could be put to productive use when the crude oil washing system comes into effect. The economics of carrying water from Yakushima Island, compared with sea-water distillation costs, show a 30 per cent saving for each 1,000 gallons of treated water. Already some tanker loads have been shipped from Milford Haven in the U.K.

The main disadvantage of these projects, which has prevented large-scale implementation, is the implied dependence on outside supplies which could come under external, political influences. This sensitivity has been explained succinctly by an editorial in the Jeddah weekly Business paper (27)

"Although it seems difficult to turn down this idea, the danger lies in our life becoming dependent on the imported water. Such a situation will provide the oil-consuming countries with powerful pressures to be put before us whenever they want".

This question of dependence on external sources of water is, in fact, largely a matter of subjective perception. The capital equipment and technology required for present and short-term future desalination plants is all imported and external supplies of these are as equally open to political pressures as would be the importation of water.

Efforts are being made to introduce new technologies into saline water conversion by solar distillation. Since desalination is still the most feasible method of supplying additional amounts of fresh water, it has become clear even to a country rich in fossil energy that all other types of energy should be investigated and evaluated for use rather than almost total reliance being placed on fossil fuels. Solar energy provides an alternative to fossil fuels and a proven method which can be utilized is the multi-effect

solar still. A multi-effect plant can be tailored to community size. New ideas and new technology can be anticipated to make the multi-effect plant increasingly practical in the near future.⁽²⁸⁾ Saudi Arabia is well placed to exploit this form of energy, receiving almost 4,000 hours of solar radiation per year.⁽²⁹⁾

One can conclude from this overview that Jeddah has limited alternative water supplies. In Saudi Arabia as a whole underground water systems are being severely overtaxed at present and more and more new wells are being drilled to meet the extra requirements for urban centres as well as for agricultural uses.

Thus Saudi Arabia has two alternative sources for supplying current and future requirements; either by fossil fuels or solar distillation. The first can be demonstrated to be a waste of a very valuable resource, whereas solar energy is a troublefree, unlimited and renewable source. In either case, Jeddah's water requirements to supply existing, let alone future, functions can only be met by a national, rather than a municipal, programme.

Water Demand

The most important factors affecting water demand are the efficiency and the types of distribution system and an accessibility to those systems, the excess quantity of water available beyond the volume necessary for urgent needs and whether or not clean water sources are available for domestic use other than those provided by the water supply in a given locality.⁽³⁰⁾ In Jeddah there is, first, the growth of demand by an expanding population and industrialization. Furthermore, the influence of a Western life style has placed heavy burdens on the limited volume of water available by raising per capita levels of consumption. For example, private gardens and the swimming

pools of the villa-type house, public gardens, and the use of flush toilets and showers have all increased demand. The rate of increase in this type of demand is directly related to income levels and therefore to the economic characteristics of the balance in urban activities. Excessive consumption of water has resulted from government policy of providing water at a price below true cost. This is a result of national social welfare policies, as distinct from local wealth creating functions. In the past houses in the city were not connected to a main water supply network and therefore water usage reflected the basic individual's ability to pay. Today most domestic residences are connected to the main water supply system (see Fig. 1.9) and demand will be even higher in the future when all houses have been connected. Compared with other cities of the Western Region, water demand in Jeddah is highest in aggregate and will remain so in the future. This fact is illustrated in Table 1.2 .

Table 1.2 : Water demand for cities in the Western Region

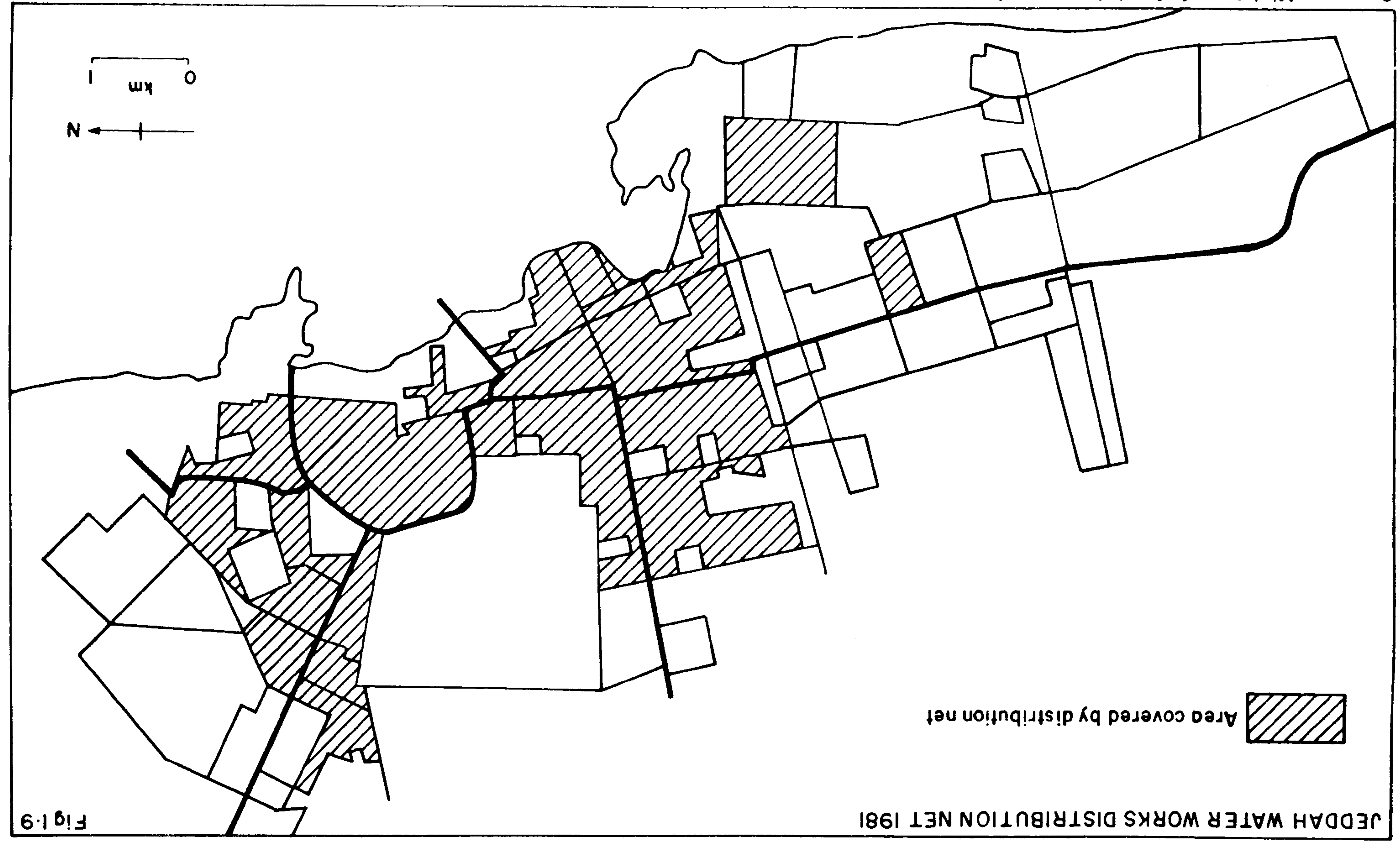
City	1975	1980	1984 ^a 1985	1986 ^a 1987	1988 ^a 1989	1990 ^a 1991
Jeddah	22	42	80	101	126	150
Makkah	11	17	32	44	57	72
Makkah (Hajj)	- ^b	- ^b	20	21	22	23
Al Taif	6	9	22	30	40	51
Medina	8	14	25	35	44	54
Medina (Hajj)	- ^b	- ^b	10	10.5	11	11.5
Yanbu	1.2	2.3	4	6	7	9
Rabigh	.4	.6	.8	1	1	1.25

^a Average projected annual demands over a two-year period

^b No allowance was made for Hajj demands in this period

Source: Development Analysis Associates (1976-1979) Final Report on
DAA Consulting for SWCC. Vol.1, Cambridge, Massachusetts, p.124.

Source: Ministry of Agriculture and Water



Area covered by distribution net

JEDDAH WATER WORKS DISTRIBUTION NET 1981

Fig 1-9

Allowance is made here for the increased demands during Hajj for the cities of Makkah and Medina but this also affects water demand in Jeddah, as many pilgrims stop there before continuing to Makkah and Medina.

In 1980 the consumption of water in the city was limited by the amount of water available from the three sources, which was approximately 218,000 m.cu.m per day. This would probably have been adequately planned had the population projection been accurate. For example, the Master Plan by RMJMP 1973 had projected the water demand in the city, based on the population growth rate both low and high, the rate projected for 1981 being 500,000 (low) and 700,000 (high)⁽³¹⁾ (see also Chapter 3). The municipality estimated the population of Jeddah for 1982 as 1,200,000 making a 500,000 discrepancy between that and the high estimation of the Master Plan. This example shows the type of difficulties facing both present and future water demand plans. However, assuming an average consumption of 240 litres per person per day, as proposed in the Master Plan and the population being currently 1,200,000, then the demand would be 288,000 cu.m. per day i.e. more than the present total output of existing sources. Thus there is an indicated shortfall in production of approximately 70,000 c.m per day. The forecast for urban demand assumes that per capita rate of water consumption will increase towards the international level (water needs of 982 litres per day per capita are projected for the U.S.A in the year 2000 including domestic and industrial uses)⁽³²⁾ So far no direct effects of present and likely future water deficiencies on the various urban functions can be measured but the imbalance between supply and potential demand can only be discouraging to growth.

Water Distribution

Water distribution, as with demand, is perceived mainly as a matter of supplying domestic residential units, this in itself a measure of the way in which industrial demand and, by implication industrial activity, does not figure largely in city affairs.

Domestic distribution is mainly through mains networks but there are still some houses to which water pipes have not been laid which are served by tanker from watering points. The first network laid down inside the city had limited capacity and the network extended from the quarantine centre in the south of the city to 5 km on the road to Medina. Water from Wadi Fatimah was transferred 28 km on the Makkah Road, where there were many faucets from which lorries used to draw water and then pour it into the reservoirs of the city.⁽³³⁾

An estimation by RMJMP in the 1973 Master Plan showed that by 1971 46 per cent of the population (381,000) had access to the mains supplied water; 20 per cent relied on tanker delivery and 34 per cent had to rely upon public standpipes. At present, the distribution system has been improved and extended to supply most major developments within the old built-up area, as shown in Figure 1.9. This existing network is divided into two areas, namely the northern area, supplied from the Blending Plant, and the southern area from both the Blending Plant and from the reservoirs at 14 klm. on the Makkah Road.

The houses which are connected to the network system receive water through ground storage tanks, which are suspect from the health point of view and suffer considerable leakage losses. A new pressurised pipe system cannot be commissioned until an assured supply of water is available. The incidence of leakages from the Jeddah water system is considered to be high, over a thousand leakages a month being reported.⁽³⁴⁾ The Ministry of Agriculture has designed a five stage programme which

includes pumping and mixing stations as well as underground storage reservoirs. The total number of houses connected in the first two stages was 1,800. The third stage, started in 1975 and completed in 1978, increased the total number of houses connected by 54,500. The fourth stage will carry the total product of three desalination plant units, 85 m.g.d, involving six underground storage reservoirs with a capacity of 20,000 cu.m. each. The fifth stage is planned to serve all the new areas of Jeddah with a total of 30,000 houses to be connected. (35)

Conclusion

It can be seen that the physical setting of Jeddah did not provide any marked advantages and disadvantages for urban activities or growth. There are no major obstacles presented by terrain which prohibited any expansion of the built-up area. However, on the negative side in the immediate hinterland of the city there are no physical resources to support a vigorous primary sector. Thus there is no mining nor prosperous agriculture.

The volume of trade and commerce which was the lifeblood of the city was traditionally sufficient to maintain the city with a fluctuating but limited population size which could also be supplied with essential water from the local region. By the time that real pressure on water resources might have appeared, the marked deficiency on local ground water resources could be made up by the provision of manufactured water, i.e. desalination. This has been possible not on the basis of local wealth created by local activities, but from national oil derived wealth.

What remained still true is Jeddah's position as a convenient entry seaport on the Red Sea coast for goods and people which then move, as in the past, through relatively easy highland passes into the Hijazi interior and further into the heart of the Peninsula (see Chapter 8).

CHAPTER 1

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CHAPTER 2

JEDDAH : FROM PRE-ISLAMIC ORIGIN TO 1947

In 1947 the ancient walls, which for many centuries enclosed the city of Jeddah, were torn down for purposes of urban expansion. This event may be said to symbolise the growth of Jeddah as a modern city. This is not because it was followed by any major coherent replanning, nor was it associated with any radical immediate change in functions or in status. In terms of status the years 1925 and 1926 could be regarded as more significant, since at that time Jeddah and Hijaz became incorporated into a larger national state. As will be seen, one characteristic of Jeddah's urban functions is that of continuity rather than change.

However, the destruction of the city walls was associated with the commencement of a period, still continuing, of very rapid social and economic change in Saudi Arabia, change so great that it would be expected to affect considerably the functions, as well as size and form, of all towns and cities in the Kingdom. Up to 1947/48 Jeddah might be said to have had a fluctuating but essentially consistent traditional character. In this chapter an attempt is made to identify the fundamental, long-established characteristics.

Jeddah Before Ottoman Rule

Jeddah is an ancient city, the history of which can be traced back for about two thousand years.⁽¹⁾ Hisham ben Muhammed al-Kalbi is quoted by Al Batanuni ⁽²⁾ as claiming that Amr ben Luhayy of the Kuda'a introduced idols from Jeddah into Makkah several centuries before Islam. According to this story Jeddah was very well-known to the people before Islam as they had settled there and built their idols for worshipping.

According to Yakut Al-Hamawi, Juddah ben Hazm ben Rayan ben Halwan of the Kuda'a took his name from the town which was part of the territory of the Kuda'a.⁽³⁾

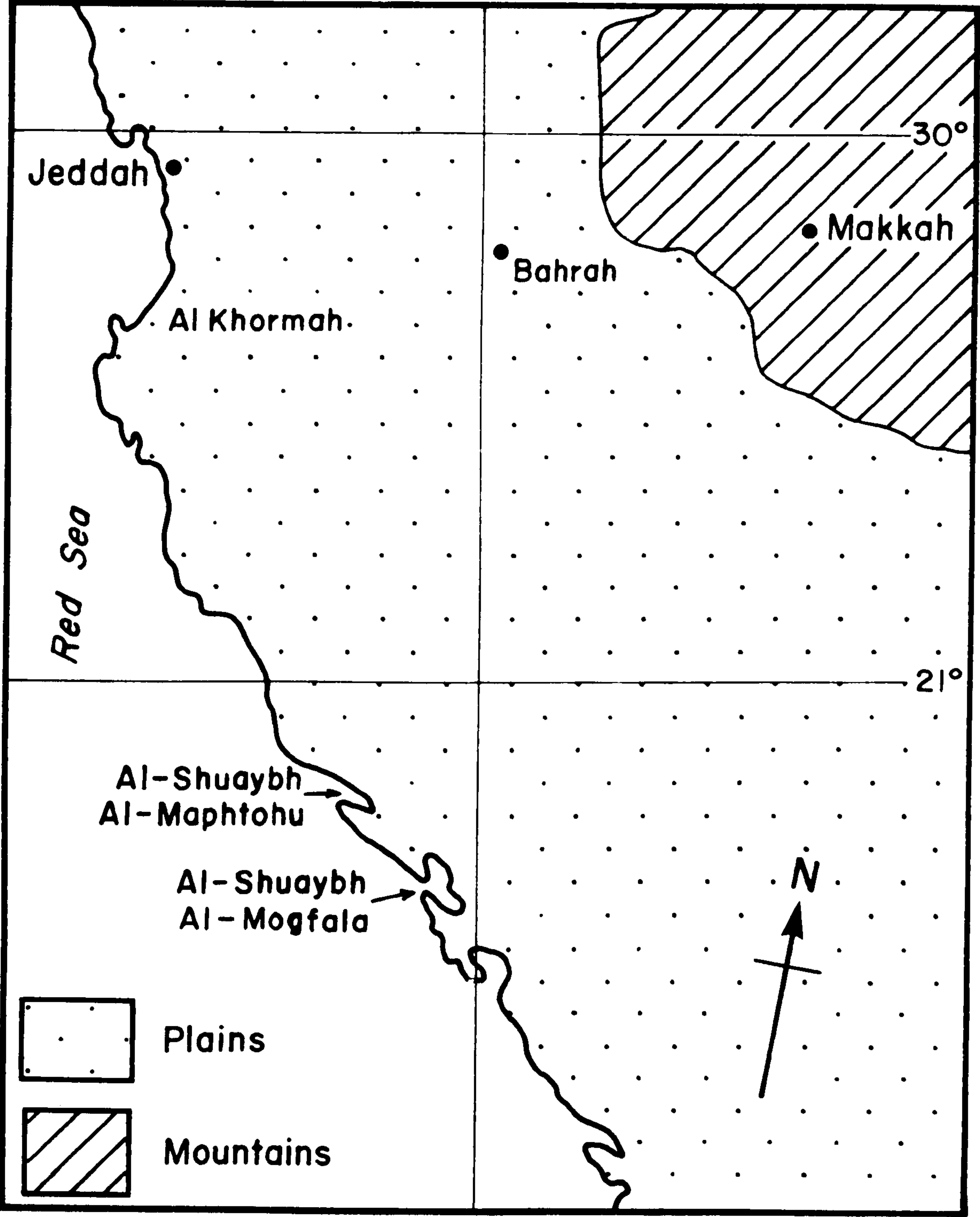
Also, long before Islam, overland routes were developed through the Arabian peninsula between Monsoon Asia, East Africa and the Mediterranean. During pre-Islamic times the natural harbour of Jeddah had rather limited use, for the great south to north spice and incense route lay overland on the interior side of the great scarp, passing through Macraba (Makkah) to Yathrib (Medina). The real development of Jeddah comes in the Islamic period, both as a port for the Holy City and as a commercial emporium in its own right. The foundations for this were laid by the Caliph Uthman in the year 26 A.H (A.D. 646). It was in that year in fact that he decided, under the insistence of the Makkans, to move activity from the old landing at al-Shuaybah (about 20 km to the south of Jeddah) to Jeddah itself.⁽⁴⁾ (Fig.2.1).

In this case some geographical factors further encouraged the Caliph Uthman to choose Jeddah as a port for Makkah. Firstly, it was a somewhat nearer coastal point for the main trans-scarp route to Makkah. (Fig. 2.1). Secondly, its natural harbour gave greater development opportunities to grow as a commercial city and as the Pilgrims' gate to Makkah.

As the initial focus of Islam and of a great empire, Makkah derived vast wealth from the wars of conquest and Jeddah became an active trade centre, channelling to the Holy City supplies coming from Egypt, Southern Arabia, the western shore of the Red Sea and India.

Even though the economic and political importance of Western Arabia diminished as the consequence of the shifting of the secular

Fig 2.1 Sketch map of the location of Al-Shuaybh and Jeddah in relation to Makkah



*Source: Redrawn from At-Jaser (Fi-Shamal Gharb)
Al-Gazira 1970*

capital of the Empire to Damascus under the Ummiyah Caliphs and to Baghdad under the Abbasi, Makkah never ceased to enjoy great prestige for its sanctity, and Jeddah retained a hold on the profitable Red Sea spice trade. (5)

By the 10th century A.D. the duties collected on merchandise arriving at Jeddah and the taxes levied on pilgrims represented the most substantial source of income for the rulers of Hijaz, and contributed in a considerable way to the survival of the city, which was administered by a vassal of the Sharif of Makkah.

In the middle of the fifth century A.H. (1050 A.D) Nasir Khosrow left the first written account of life in Jeddah. He gave a general description of the town:

"Jeddah is a great city situated on the coast and surrounded by a strong wall. Its population includes 5,000 male inhabitants. There are no buildings to be seen outside the city, except a mosque which is called Masjed ar-Rassoul" [The Prophet's Mosque].

He wrote:

"the city has two gates (in its walls) : one to the east, opens onto the Makkah road; the other to the west, opens onto the sea. There are no trees nor any vegetation in Jeddah; all that is necessary for everyday life is brought in from nearby villages." (6)

In the sixth century A.H. (1183) Ibn Jubayr was in Jeddah, but in his description he gave us a darker, unpleasant picture of Jeddah mentioning only small-scale and petty local trading activities:

"The people of Jeddah employ themselves in all manner of trades such as hiring camels, and selling milk or water and other things like dates which they might collect." (7)

During this poorer economic period many rich and trading people left Jeddah for other areas.

Thirty one years after Ibn Jubayr's visit (1229 A.D) Ibn al-Mujawir was in Jeddah and helps to explain what had occurred to reduce the prosperity of the city.⁽⁸⁾ In his description he starts by listing several localities on the road between Makkah and Jeddah. On the action of Caliph Uthman Ibn Affan in recognizing the advantage of Jeddah's position on the coast, over al-Shuaybah, he said:

"No doubt before Jeddah, in those surroundings there was no closer, no safer, port than al-Shuaybah"

Ibn al-Mujawir explained the ties between Jeddah and other Persian cities and how the Persians claimed to have built Jeddah:

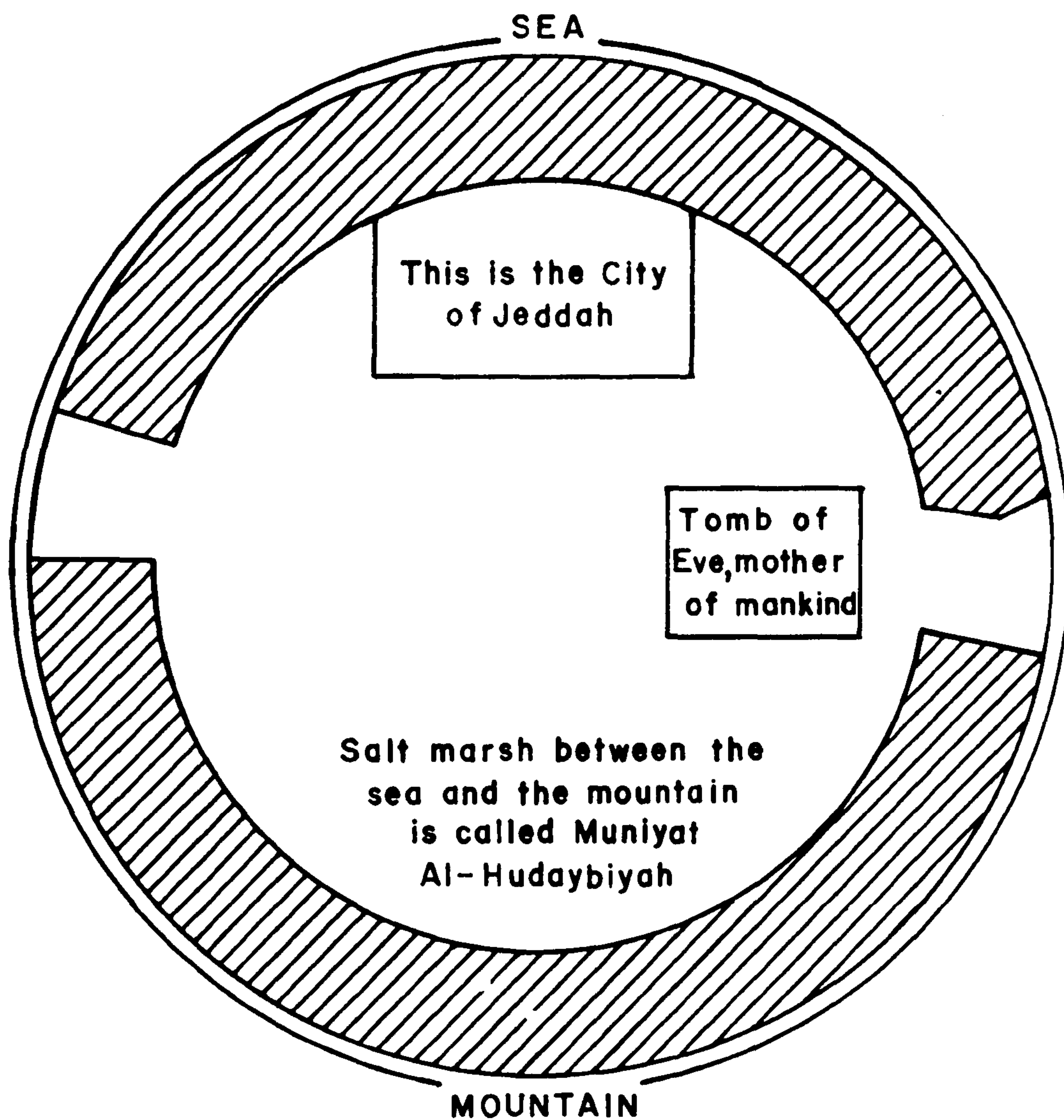
"The Persians said that 'after the destruction of Siraf its inhabitants migrated to other shores ... and some of them arrived and settled in Jeddah. They built around the city a rock wall with gypsum mortar .. and this wall was ten metres wide .. then they built around it another wall of squared limestone blocks held together with gypsum mortar, and the second wall was five metres wide, so that the cumulative width of the two adjoining walls was fifteen metres. Four gates were opened in the wall : Bab al-Ruma, Bab al-Madbagha, Bab Makka and Bab al-Furda, this one by the sea. Around the wall a huge, wide and deep ditch was dug so that the seawater flowed around the City which became in this way like an island surrounded by abyssal waters." see Fig. 2.2.

When the Persians strengthened the city defences it is said that the inhabitants, fearing to remain without water supplies, excavated sixty eight cisterns within the city and as many without; more correctly, five hundred cisterns were built inside the city and as many outside. Ibn al-Mujawir concluded with:

"And it happened that when abundant rainfall filled the cisterns lying outside the city, slaves carried this water on horseback and poured it into the house cisterns .. where it lasted all the year through."

Regarding Ibn Jubayr's gloomy picture of Jeddah, Ibn al-Mujawir ascribed the cause of the ruin of this city to the greed of the Amir of Makkah, who coveted the possessions of the rich Jeddah

Fig. 2.2 First Sketch of Jeddah as drawn in 1229 A.D. by Ibn al-Mujawir



Source : Ibn - al Mujawir

merchants but these, following the advice of an elder merchant, took their belongings and sailed away on their own ships which took place in the year 473 A.H. (1080 A.D). Another reason mentioned by Ibn al-Mujawir for the ruin of the city was:

"The Arabs also came and laid siege around the city until the water became scarce and the inhabitants were thus forced to embark on their ships and left it for the Bedouins."

Jeddah appears pictorially for the first time in a sketch by Ibn al-Mujawir (Fig.2.2) which showed the city as circular. Ibn al-Mujawir describes Jeddah in the early thirteenth century as a small town on the sea coast and as the port of Makkah, overcrowded during the pilgrimage season with the congregation of large crowds of pilgrims from all over the world - from Egypt, India, and the Yemen. When water became scarce people carried it into the city from al-Qarin, midway between Jeddah and Makkah. He describes the inhabitants of Jeddah as of Persian descent whose buildings are built of limestone and palm fronds, and he adds that the city has plenty of inns.

From these and other travellers' reports it is clear that a shortage of water was the main problem for the development of the city throughout time, in addition to political instability.

With the decline of the abassid caliphate the Port of Jeddah had, in fact, once more become extremely active because a great part of the eastern trade once directed to Baghdad via Basrah began to move towards Egypt through the Red Sea and Jeddah. After 828 A.H. (1425) the Mamluk Sultans of Egypt asserted the right to collect customs dues at Jeddah and the city became politically and economically dependent on Egypt. (9)

Between 1426-1432 A.D Jeddah became increasingly attractive

to shipping, especially from India and China from which more than 40 ships were to be found regularly in Jeddah harbour : it is reported that in 1431 or 1432 several junks had not been able to unload their cargoes in Aden in reasonable conditions, following which Jeddah appears to have become the only important Arabian Red Sea port of entry for Eastern merchandise. ⁽¹⁰⁾ Khalil al-Zaheri, a near-contemporary author also wrote :

"Every year more than a hundred ships call at Jeddah and provide an average annual revenue of 20,000 dinars." ⁽¹¹⁾

Another incident of importance to Jeddah was the fall of Constantinople to the Turks in 1457. The Bosphorus was closed and access from the Mediterranean to the Black Sea terminal ports of the Central Asiatic overland trade route was interrupted. Since the Red Sea route was the only convenient substitute before voyages around Africa became normal, Jeddah was one of the few sea ports which were safe and practicable trans-shipment points. The Arabs and Egyptians, who fully controlled it, stood to gain a virtual monopoly in the spice traffic.

However, 1502 and onward saw the coming of the Portuguese to eastern waters and their attacks on Muslim shipping made Jeddah, one of the famous Islamic commercial centres, a focus for Portuguese attention. The Mamluks, and after them the Ottomans, made determined efforts to meet this new threat to Jeddah. Husayn al-Kurdi, the Mamluk Governor of Jeddah, appointed by Sultan Qanswah al-Ghawri of Egypt, soon proclaimed a decision to build a strong wall around Jeddah in 911 A.H (1505 A.D). ⁽¹²⁾ Fortification had existed before, as witnessed by Nasir Khosrow in 1050 and by Ibn Jubayr in 1181, but this had since fallen into ruin, as reported by Lodovico Varthema,

who was in Jeddah in 1503 or 1504, barely a few years before Husayn's return.

The function of the wall was said to protect the population from the frequent inroads of bedouins, but actually Husayn's aim was to protect the city from any attacks by the Portuguese. (13) The people of Jeddah suffered considerably from the construction of the wall. Husayn al-Kurdi recruited every able-bodied male for the job and started the work immediately. With implacable swiftness he tore down entire sections of the town to clear land for the wall using the rubble as construction material. (14)

Thereafter the built-up area of Jeddah was constrained by its encircling wall which had four main facets, facing the cardinal points, with a total perimeter of about 1676 metres. (Fig. 2.3). The height of the wall, about 4 metres, approximated to the usual height of walls around the courtyards of the houses. It had nine gates, six of them on the western sea side, the other three gates on the landward sides. (15)

Dames Joao de Barros give an interesting sketch of early sixteenth century Jeddah: (16)

"...There is only one channel by which the city is approached, in the form of a letter S, the town being at its upper end, and the entrance of the channel at the lower. Part of the town has good stone and mortar houses, but most are of mud and clay."

In describing the economic life of the town and its population he wrote:

"Most of the inhabitants were merchants by reason of the goods which come together, both coming in and going out. The remainder were Arab natives of the land, and all dwelt in terror of the Badwy; Bedouins of the open country who sometimes suddenly entered the town and destroyed and robbed it before it was fortified."

Industrial activity in Jeddah at this period consisted of traditional crafts developed for the needs of the local people, such as silversmiths, goldsmiths, woodworking, textiles, tailors, pottery and ship building. Woodwork was a fine and famous industry in Jeddah with many fine wood carvings being produced to decorate gates, doors and windows. An example of these fine designs, some of which still survive, can be seen in Plate 7.1, 7.2 which shows the Rushan reflecting the fine features of Islamic architecture in wood carving. Most wood for this industry was imported. Pottery is another example of an old industry for supplying earthen water-jars for storing water at home zeer, and smaller ones sharbah for cooling drinking water. Piped water systems and the increasing use of refrigerators has meant that the jars are no longer needed. At the same time there were other handicrafts, such as subha (beads) used mainly for the purpose of prayers, made from wood, animals' bones and beechwood. Kawafy is made from different coloured cloths cut into small square pieces and stitched neatly together. Shipbuilding was one of the principal industries in Jeddah. Ships were made for several purposes, such as commercial use, military use and for fishing. Several types were built, such as the sambuk, a type of boat which can transport 15 to 60 tons of cargo according to size. Sambuks were once the principal pearling vessels. Zawrak, a small, double-ended boat, 5 to 7 metres in length, was used for fishing and carried a crew of 7 to 8 men.

Thus, during the early centuries of Islam, Jeddah was only a small town at a distance of one day's journey from Makkah and which gained its importance as a port of the Holy City. Commerce and pilgrims were the major way of life; most of its inhabitants were wealthy traders. Its water supply was, however, inadequate and because of the shortage of water and poor soils in the local hinterland,

Jeddah had no green vegetation and most food and other supplies came from nearby villages.

In the absence of more adequate information concerning this period, any statement regarding settlement type, household numbers, size of industry and population size can only be guesswork. This was the situation in Jeddah in the early centuries of Islam.

Jeddah During Ottoman Rule

In the first half of the sixteenth century the Turkish fleet anchored at Jeddah and the subsequent transfer of power to the Turks could have invigorated its economic life since Jeddah city and port became linked to the most powerful empire at that time. However, in practice, the existence of an Ottoman Wazir in Makkah and a Wali in Jeddah at the same time as Ottoman indirect rule in the Hijaz, through the Sharif, led to political instability. Periodic conflict between the Sharif and the Wali of Jeddah, material evidence of which appears in the restriction of city growth within the walls, discouraged commercial activity.

In the 17th century there was a further sharp decline in the economic life of Jeddah due to Dutch and English intervention in regional sea-trade. Jeddah underwent a period of eclipse, with the transit of goods into its port reduced to a trickle.

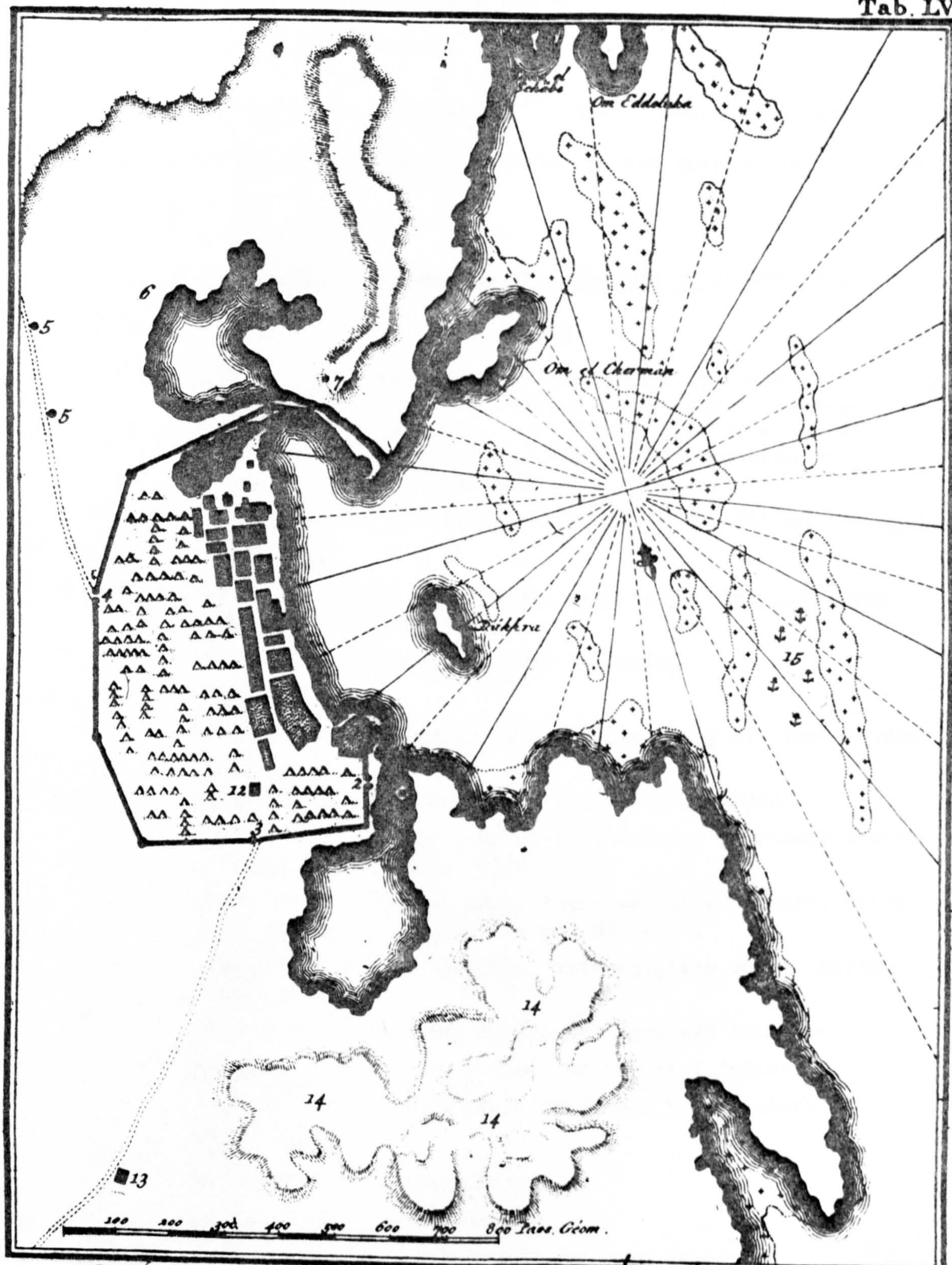
From the mid eighteenth century onward, Western travellers produced more and more detailed descriptions of Jeddah and its activities. In 1762 C. Niebuhr drew a remarkable map of Jeddah (Fig. 2.4) and described the city as follows. The walls built by Husayn al-Kurdi were so ruinous that a person could enter over them on horseback in many places. The country lying immediately around the city was sandy and barren. The city was entirely destitute of water,

LEGEND

- 1) The house of the pasha
- 2) Bab Sharif
- 3) Bab al-Jadid
- 4) Bab Mecca (Makkah)
- 5) Watchtowers on the Mecca Road
- 6) Salt-flat, where salt is collected when the
seawater evaporates
- 7) Christian Cemetery
- 8) An entirely destroyed tower with battery
- 9) The so-called part of the Galleys
- 10) Niebuhr's house
- 11) The Customs House
- 12) The house of the Kiaya (the pasha's lieutenant)
- 13) Eve's tomb
- 14) Large hills of coral-rock and shells
- 15) Anchorage of India and Suez ships

Fig. 2.4 Map of Jeddah in 1762 by C.Niebuhr.

Tab. LV.



Grondtekening der Stad Dsjidda. | Plan de la Ville de Dsjidda.

Source: C.Niebuhr

the inhabitants having none to drink, but what is collected by the Arabs upon camels from reservoirs among the hills. ⁽¹⁷⁾ (This was before the creation of Ain Waziriyah).

In the year 1815 Burckhardt ⁽¹⁸⁾ gave a short but remarkable census of the number of establishments existing in the town during his trip. (see Table 2.1).

Table 2.1 Number of Establishments existing in Jeddah 1815

<u>Number</u>	<u>Items</u>
18	- Vegetable or fruit stands. The number of these had greatly increased on account of Turkish troops who were great devourers of vegetables. All fruits came from al-Taif which was rich in gardens. Vegetables were brought to Jeddah from Wadi Fatima.
21	- Butter sellers, who likewise retail honey, oil and vinegar.
8	- Date sellers.
5	- Sellers of beans, sweetmeats, sugar-plums and different sorts of confectionery.
2	- Kebab shops - these were kept by Turks.
2	- Soup sellers.
1	- Seller of fish fried in oil, frequented by all Turkish and Greek sailors.
10 or 12	Stands where bread was sold, generally by women.
2	- Sellers of leban, or sour milk, which was extremely scarce and dear all over the Hijaz.
2	- Shops, kept by Turks, where there was Greek cheese, dried meat, dried apples, figs, raisins and apricots.
11	- Large shops of corn-dealers, with Egyptian wheat, barley, beans and rice.
31	- Tobacco shops, selling Syrian and Egyptian tobacco.
18	- Druggists. These were natives of the East Indies.
6	- Large shops of Indian piece goods and French cloth.
4	- Barber shops.
4	- Tailors - mostly foreigners.
5	- Makers of Na'l, or sandals.
2	- Turners, who bore pipe-tubes and make beads.
1	- Watchmaker.
1	- Seller of Turkish and Persian tobacco pipes.
7	- Money exchanges, or serafs.

Source: see Reference

Burckhardt also divided the commerce of Jeddah into two principal branches - the coffee trade and the indian trade.

Trade was the main source of income in Jeddah and played a great part in the growth of the city since Jeddah was the main port of West Arabia and because both Makkah and Medina were supplied from this source. Large quantities of corn, rice, sugar and oil, were imported from Egypt, without which this part of Arabia could not possibly be inhabited. Jeddah presented a focus of considerable traffic between Egypt and India, for ships from the Suez proceeded no further than Jeddah and those from India seldom proceeded to Suez.

In 1837 the English traveller Wellsted estimated the average yearly amount of India trade with Jeddah to be 10,000 tons. The following figures from the external trade documents published by the Department of Commerce show the importance of traffic in Jeddah port. ⁽¹⁹⁾ See Table 2.2

Table 2.2

Jeddah : Imports from East Asia in 1843

Origin, number of incoming ships and value of cargoes (in francs)

From Calcutta	14 ships	Value of freight	1,531,000 francs
Java	6		244,000
Sumatra	2		936,000
Bombay	1		202,000
Malabar	2		12,000

Origin and general value of Jeddah imports in 1843

India and Indochina	4,725,000 francs
Basrah, Persia and Muscat	1,050,000
Java and Hadramaut	105,000
Yemen	525,000
Berbera, Massawa and Suwakin	576,000
Kosseir	788,000
Suez (100 barques)	2,100,000
From the north overland to Mecca	788,000
Total	<u>12,397,000</u>

Source: see Reference

Water supply remained a constraint on growth. During the Ottoman period several attempts were made to find water supplies other than those of cistern-stored rainwater. From the time of Mamluk Sultan Qanswah al-Ghawri up to the nineteenth century water was led from Wadi Qaws, south-east of Jeddah (Fig. 1.2) in the so-called Ghawri fountain and these works were extended in Ottoman times. Towards the end of the nineteenth century conduits carried water about 11 km from wells at Ain Al-Waziriyah. Reservoirs were constructed in two of the city's quarters, al-Aidarous and al-Mathloun but the quality of water became very poor during low rainfall periods. (20)

In 1907 a coal-fired thermal condenser - Al-Kindassah - was installed mainly to provide water for foreign residents. Providing good, medically safe water in relatively small quantities, Kindassah's production was interrupted by the cessation of coal imports during the Saudi-Hashemite war of 1924/25 and finally ceased in 1927. (21)

Throughout the Ottoman period, and earlier, some themes, which appear later as also of contemporary significance, of relevance to the functioning of Jeddah City can be clearly identified. First, Jeddah's maritime trade depended for its vigour mainly on forces external to Hijaz. As the port for Makkah there was always some core traffic and trade for Jeddah, but otherwise the strength or weakness of its local rulers, the fluctuating regional strength of the Ottoman empire and before that of the Mamluks of Egypt, and the relative importance of the Red Sea shipping routes to European and other powers, determined the commercial prosperity of Jeddah.

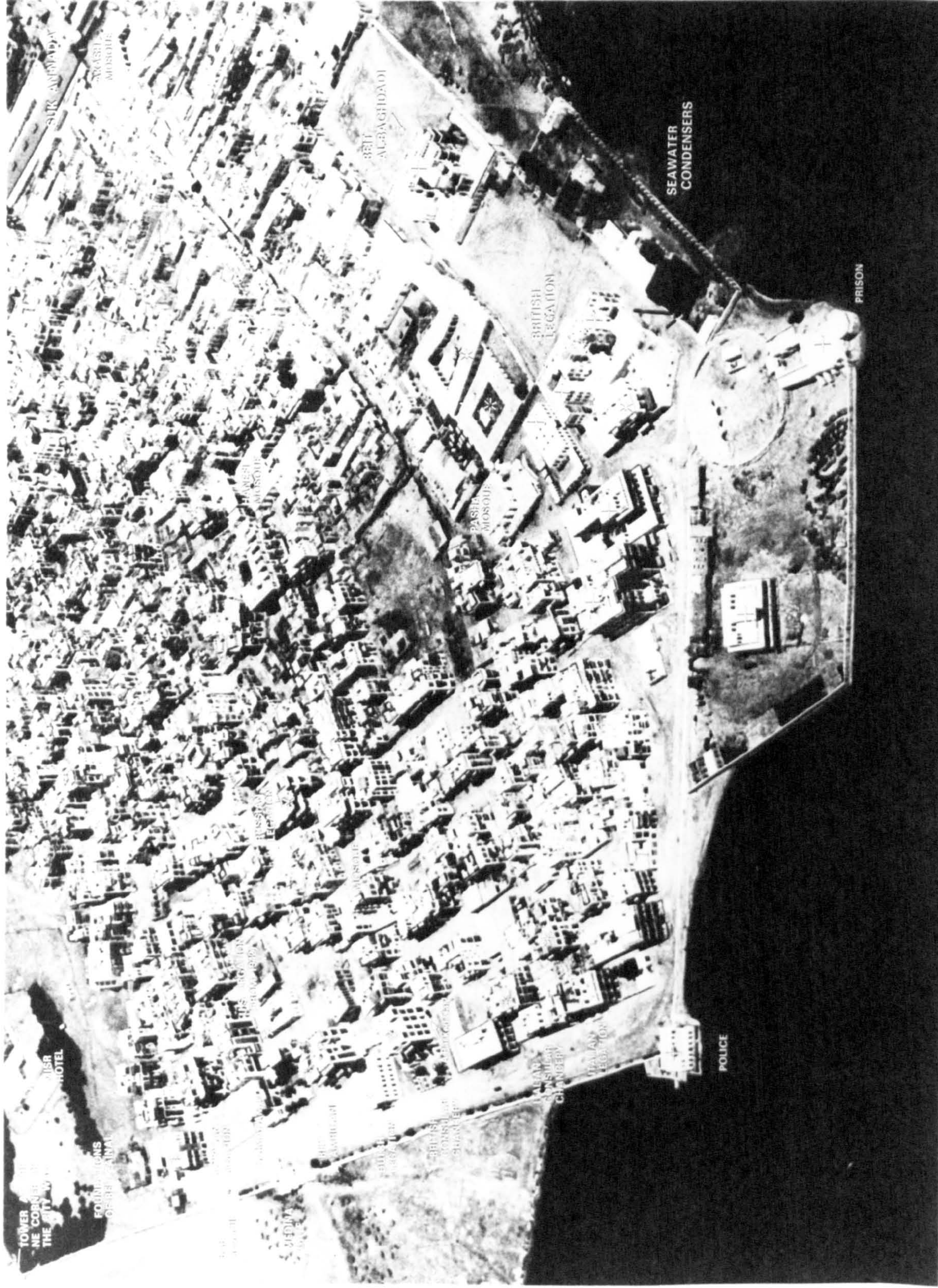
Secondly, water supply, still the most vital of all public utilities, was and is only assured when some wealth or capability from outside Jeddah itself could be applied to the problem.

Thirdly, and as is examined below, the presence and vigorousness of activities within the city were all ultimately based on maritime trade. The evidence for these functional activities and for trade for the period up to the 1930's is very largely indirect. The morphology of the city was generally similar to that of most other traditional Arab and Asian urban settlements. Within the walls lay a closely packed mass of buildings served by irregularly aligned, unpaved streets and lanes of varying widths. The only large open space, now built over, was near the port customs house. This and a smaller area in the north were used as open air markets. (Fig. 2.5). The commercial centre, located in the nucleus of the present CBD consisted of specialised markets suq such as Suq al Samak for fish (also known as Bangala), al Khodrawat for fruit and vegetables, as well as the Great Market - Suq el Kbir. Within this covered market were smaller suqs, such as al Nada, al Jamme etc. each with its own speciality; textiles, silver, spice and so on.

The architecture, judging from those buildings which have survived until today or recently, was of a type which has been termed "Red Sea" (see Chapter 7). Local materials were dominant, coral limestone cemented by lagoon clay, but imported timber, mainly teak, was used to strengthen the porous and soft stone. The people of Jeddah do not appear as able or willing to import superior materials until very recently, even though it was a busy port. This perhaps reflects on the relative poverty and limitation of Jeddah's traditional economic landward hinterland. Of the six mosques that lay within the city walls up to the 1930's, the oldest and most beautiful, Masjd ash-shafei, is said to have been built during the epoch of Caliph Omar Ibn al-Khattah, 634-664 A.D, before Jeddah was selected for development as the port for Makkah.

Before the advent of the Turks there were no schools at all

Fig.2.5 Central Jeddah in the early 1940's - Note few open spaces



in Jeddah, only some Koranic lessons given in mosques. At the beginning of the nineteenth century the Turks established the first regular school in Jeddah (Al-Rashedya). However, it had several limitations such as not enough teachers, and the main language was Turkish. The school was located near the fortification by the sea, exactly in front of Basha mosque.

Regarding industry, no significant change in industry occurred during the Ottoman rule. Most of the old industries continued and some new types were created, such as the printing machine brought to Jeddah at the beginning of the twentieth century for publishing newspapers. A modern machinery workshop was also established during the late nineteenth century period of Sharif Husyne bin Ali. (22)

The size of the town and its population is largely guesswork based on the reports of travellers who had been in Jeddah at different times. These reports often differ from each other (Population size since early time up to 1982 is shown in Table 3.1). However, the size of population up to 1947 did not exceed forty thousand.

Urban development during the last Ottoman rule covered most of the land within the walled city for residential and commercial uses (Fig. 2.3). The city attracted more urban residents, merchants or craftsmen who came originally as pilgrims and found Jeddah an attractive place to live in. These new settlers merged with the original population.

Jeddah During the Creation of Saudi Arabia until 1947

At the fall of Ottoman rule the last amir of Makkah, King Husayn of the Sharif family, united the Western region for a short time when he established the Kingdom of al-Hijaz (1916-1925).

In spite of Jeddah's varied history, the character of the town changed little, especially under Husayn's rule, partly because his

reign was short and politically unstable.

Absulaziz Ibn Saud, the founder of the unified Kingdom of Saudi Arabia took Makkah without a fight in 1924. He beseiged the city and cut off the everyday landward supplies of food and all water sources outside the walls. The citizens finally asked Sharif Ali to abdicate and after a short further resistance he left the city. The entry of King Abdulaziz in 1925 ⁽²³⁾ linked Jeddah and Hijaz with a larger Arabian political unit, a fact which has become very significant for the future of Jeddah's functional activities. Significantly, unlike previous periods of difficulty, on this occasion there was no flight from the city, suggesting that the city was much more well established and organised. Citizens were in fact involved in the negotiations between Sharif Ali and King Abdulaziz.

The same year (1925) saw effectively the establishment of Saudi Arabia as a unified state. Although all the regions which formed the State of Saudi Arabia were not united into one country until 1932, called the Kingdom of Saudi Arabia, the viceroyalty of Al-Hijaz remained a separate administrative unit within the context of the Saudi State until the Council of Ministers was formed in 1953; this united the country under one administrative body. Under the rule of King Abdulaziz, who came to power after the fall of Jeddah, Saudi Arabia entered a period of political stability and internal security which led to general improvements being made throughout the country.

During the period 1925-1947 the city was still surrounded by its wall and most of its activities took place inside the wall. The shape of the city was quadrilateral, measuring about 900-1,000 yards from north to south and 800-900 yards from east to west. ⁽²⁴⁾ The houses

were compacted together because the citizens commonly preferred to build their homes very close to each other. The social relationships were close-knit, as the buildings were densely arranged.

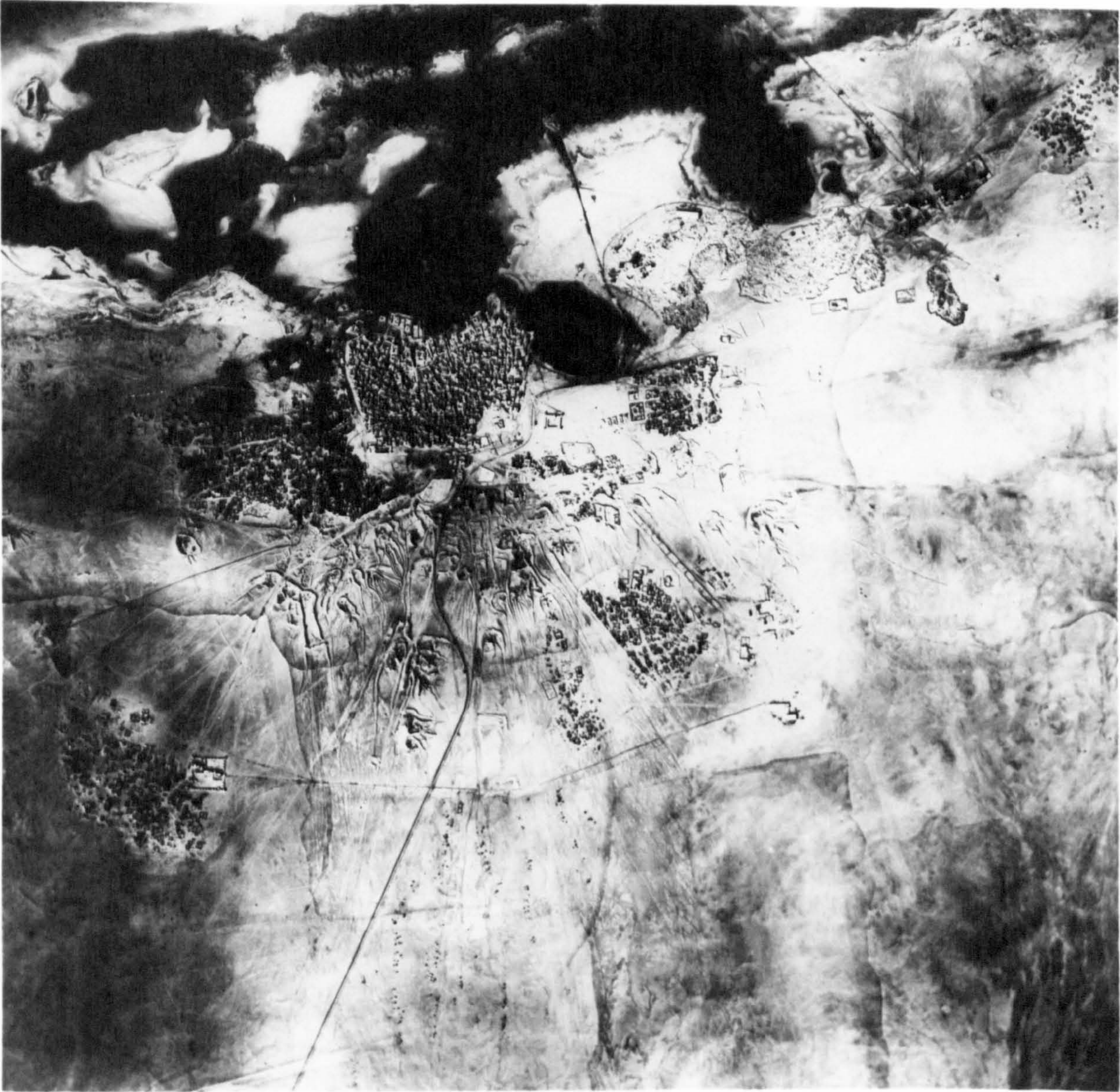
Jeddah was surrounded by small villages in the north and south. Most of the houses in these villages were small houses and huts. The settlers of these houses were mostly Bedouin, camelmen and negroes. These villages were located in what are known today as the Harris quarters of Al Nuzla al-Yamaneyah, Nuzlat Bani Malik and Al Ruwais are located south and north-east of Jeddah. (Fig. 2.6)

Housing conditions were bad as a result of poor foundations and houses were thus liable to collapse. Sanitation was by cess-pits and lighting was generally by oil or petrol (although there were private electrical plants in the Royal Palace and in the foreign consulates).⁽²⁵⁾

All streets and the small squares were floored with fine sand due to the absence of any stone for paving. Most streets were narrow, crooked and ranged between 8 to 15 m in width, and were kept fairly clean by the people themselves sweeping them.⁽²⁶⁾ Asphaltting had not yet been introduced. In the old part of the town, which could be considered as the Central Business District (C.B.D) narrow streets and alleys prevailed. A shortage of open spaces and crooked streets resulted from citizens building their homes without attention to the direction of streets.

Telegraph, telephone, radio and postal services were very limited in development. Telegraphs were almost non-existent, the telephone system was rudimentary. There were only fifty ordinary telephones when Abdulaziz entered Jeddah; in 1936 there were 254 subscribers in Jeddah. Postal services were unreliable, but Saudi Arabia became a member of the International Postal Union in 1927. In

Fig.2.2.6 Jeddah in 1948 - New development to the north and south
of the demolished walls



1939 Jeddah operated one of the few post offices in Saudi Arabia and could handle all operations specified by international conventions. The government, in general, depended on radio which was maintained at the chief centres and was adequate for its purpose. (27)

During this period there was no commercial aviation in the whole country, but there was a fortnightly services by B.O.A.C. calling at Jeddah on the route between Cairo and Aden. In 1936 the government allowed Misr Airways of Egypt to establish a service between Jeddah and Makkah to serve the pilgrimage. This was abandoned in 1936 after an accident. In 1945 Saudi Arabia Airlines was founded and this began operating with only three DC-3 aircraft. (28) (see Chapter 8).

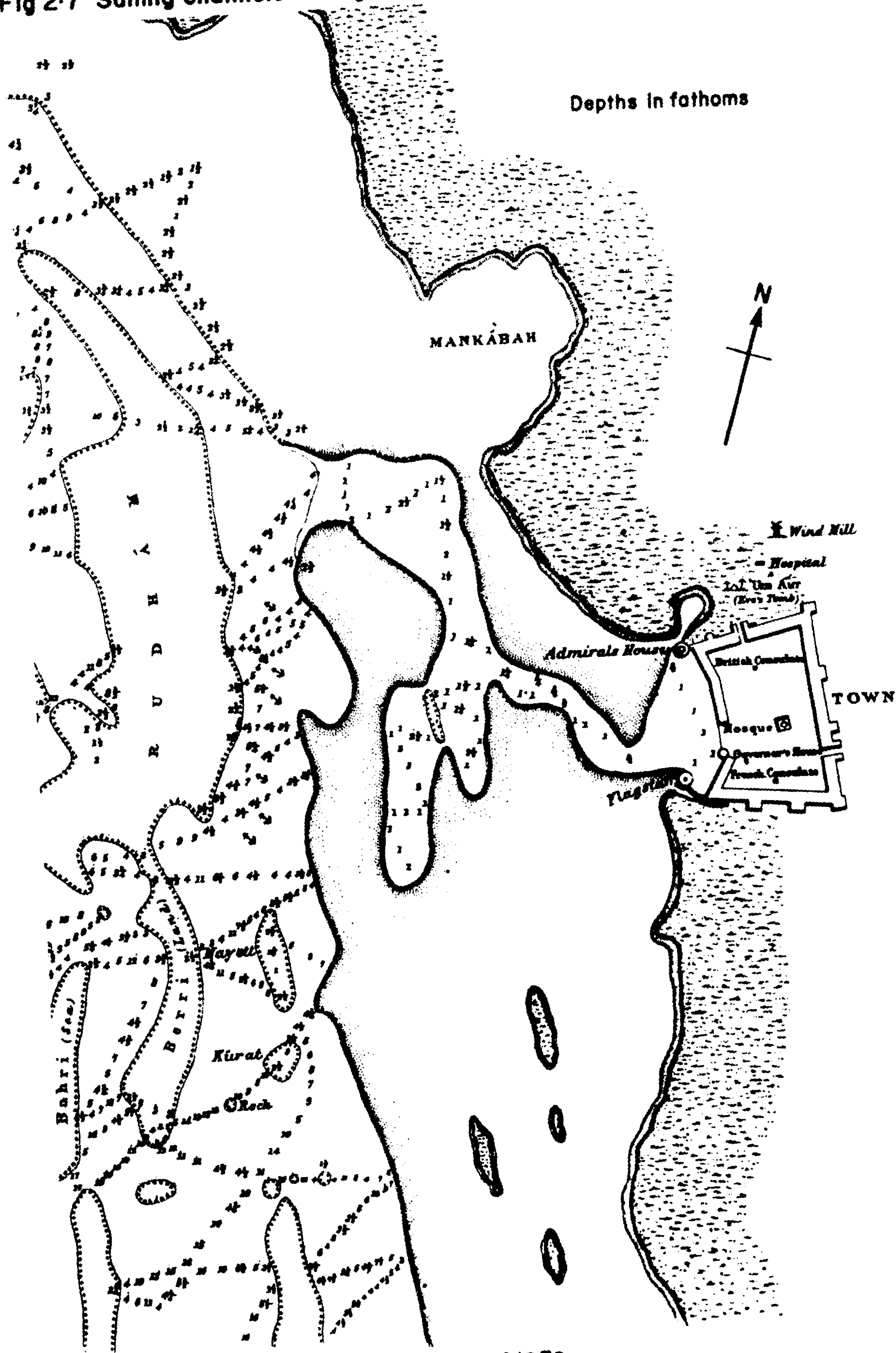
When the Saudi government took over the rule of Jeddah, the first priority for improving public services was the health services for both citizens and pilgrims. In 1933 the government hospital was the only hospital in Jeddah, reconstructed and remodelled in the same year. The capacity of this hospital was 80 beds. Besides this hospital, there were two Quarantine Stations located at Sa'ad and Wastah islands. The function of these quarantine stations was mostly to provide health services to pilgrims before their arrival in Jeddah. Sa'ad quarantine was provided with a condenser for fresh water, electricity generator, pharmacy and five large halls to accommodate eight hundred pilgrims. The Wastah quarantine was provided with several reservoirs for keeping fresh water and eight large halls to accommodate at least five hundred pilgrims. (29)

The pilgrimage to Makkah, together with the commercial activities, provided the main revenue of Jeddah until the discovery of oil which affected the whole country. However, since the foundation of Jeddah the port has functioned as the major port for pilgrims and handling cargo for the consumption requirements of Central Hijaz.

Since the construction of the Hijaz railway in 1908 and its destruction in 1916 during the Turkish rule, the volume of trade passing through Jeddah declined sharply but it still remained a Turkish naval base guarding the Red Sea and was extensively used by pilgrim traffic from Africa and Asia. However, during the two World Wars no particular improvements were made in the port and there were no covered storage facilities. ⁽³⁰⁾ In addition, the port could be described as difficult to approach because there were only two anchorages which were entered by channels penetrating the reefs by a narrow 'gateway'. (Fig. 2.7). The outer anchorage, $2\frac{1}{2}$ sea miles off-shore, had 5-19 fathoms of water, and the inner anchorage $1\frac{1}{4}$ sea miles off-shore, 4-6 fathoms. A concrete quay, variously reported as 35, or 100 yards long, with 3-4 feet of water alongside, had no equipment and was used mostly by pilgrims. The capacity of the port at this time, the late 1930's, was estimated at 300-500 tons daily. ⁽³¹⁾ Large vessels had to anchor well out at sea, the passengers and commodities being ferried to the shore by sambuks (small boats) which provided income for a large number of people who were licensed known as al-Ma'adi. ⁽³²⁾ (Plate 2.1 and Fig. 2.8) (This service disappeared with the construction of a new seaport at the beginning of the fifties (see Chapter 8 for more details).

The pilgrimage fluctuated from year to year and, in consequence, had a great effect on the income of Jeddah. ⁽³³⁾ It can be concluded from Table 2.3 that both World War I and King Abdulaziz's conquest of the Hijaz cut deeply into Hajj arrivals. Equally, the great depression years of the 1930's and World War II both caused large drops in the number of pilgrims and, thus, the finances of Jeddah and the State were severely strained. This suggests that the regular revenue from Hajj was not sufficient to support improvements in the traditional services.

Fig 2-7 Sailing channels through reefs to Old Jeddah port



Source: British Admiralty Chart 2599 of 1859



Plate 2.1: Sambuks (small boats) which were used by al-Ma'adi to carry passengers and commodities to the old port.

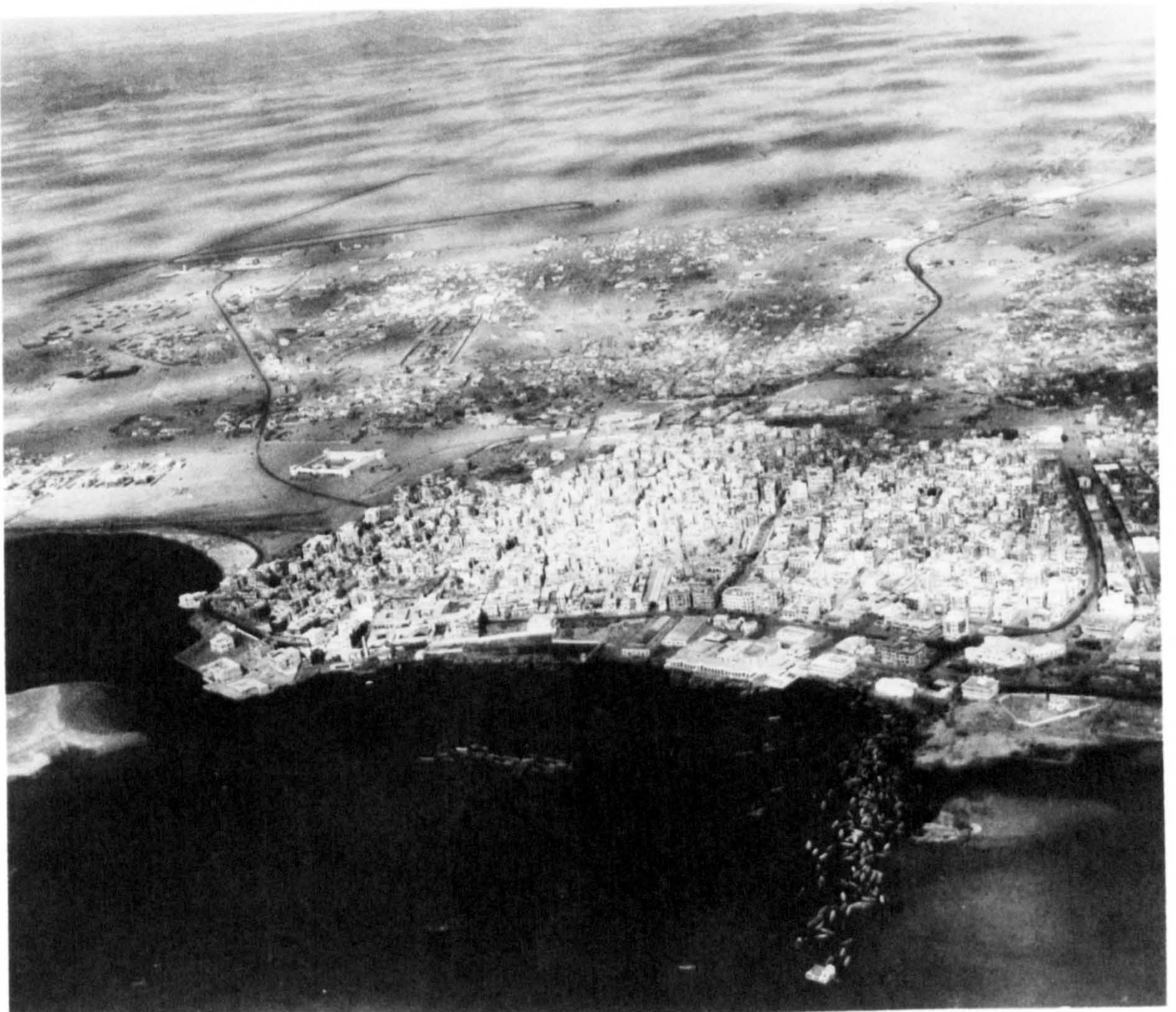


Fig.2.8: Large number of boats queuing well away from the old port in early 1950's.

Table 2.3 Hajj Arrivals to the Kingdom (1927-1945)

Year	By Sea	By Land	Total
1927	150,000*	27,000	177,000
1928	97,000	50,000	147,000
1929	90,000	58,000	148,000
1930	84,000	33,000	116,000
1931	50,000	34,000	84,000
1932	29,000	11,000	40,000
1933	19,500	1,000	20,500
1934	22,000	3,000	25,000
1935	30,000	4,000	34,000
1936	33,000	47,000	80,000
1937	49,000	1,000	50,000
1938	64,000	3,000	67,000
1939	49,000	10,000	59,000
1940	32,000	4,000	36,000
1941	24,000	16,000	40,000
1942	25,000	-	-
1943	-	-	62,590
1944	-	-	37,859
1945	-	-	37,630

Source : Long, E.D. The Hajj Today, pp.127-128.

* of which about 126,000 landed at Jeddah

In 1943 there was still a shortage of fresh water. The water then came from three sources, as noted in the Report of the American Agricultural Commission.⁽³⁴⁾ First, new Kindassah, condensers, had been installed inside the walls of the city near the seashore in 1928 (Fig. 2.5). These condensers had a maximum production of 150 tons per day and from them water was distributed by water-carriers and donkey-carts. The water was sold by the government at a price slightly higher than its production costs. Secondly, conduits carried

about 28 gallons a minute from two wells situated about 11 kms east of the city. About 165 tons of water was distributed in the city by the same means as from the condensers. Thirdly, several reservoirs and cisterns had been constructed a short distance outside the walls to the east and south of the town. The average amount available from these sources was estimated to average about 40 tons per day but fluctuated with variations in rainfall. Whilst these sources were mainly used for human use, there were some wells with saline water inside the city and near it which were used for streets and gardens. The total daily consumption of water from all sources amounted to 350 tons. The Commission's report stated that the daily per capita average use of water amounted to 0.014 of a ton, or 2.8 Imperial gallons, an incredibly low level compared with the position forty years later.

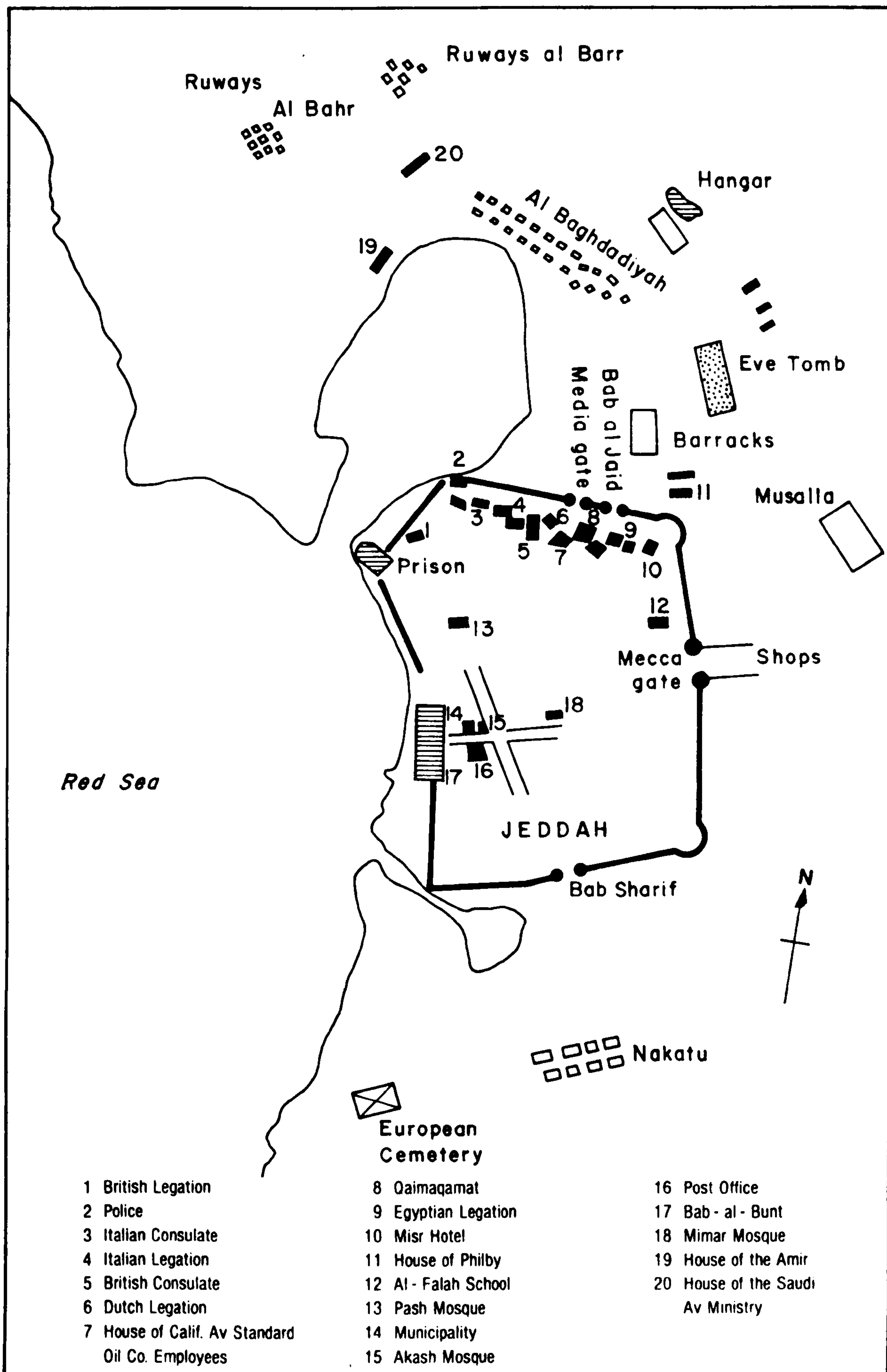
The first direct effect on Jeddah of its incorporation in a unified state which, during the 1940's began to obtain growing oil revenues, appears in this area of water supply. The American Commission noted above studied Jeddah entirely because of Aramco's growing involvement in Saudi Arabian development. In 1933, King Abdulaziz signed at Jeddah the first oil concession agreement in Saudi Arabia in return for £35,000 in gold. In the Report the possibility of leading water from Wadi Fatimah to the city was noted and by 1362 A.H, 1947 A.d, King Abdulaziz had established a waqf, a trust fund to operate the Aziziah piped water supply to Jeddah from Wadi Fatimah.⁽³⁵⁾ This can be said to mark the beginning of a new era in which, as is examined in a later chapter, the scale and balance of the functional activities of Jeddah become increasingly determined by central national government and by the consequence of the growing wealth of the Kingdom and the revenue of that central government.

Other indicators to show how little Jeddah had changed for centuries up to the 1940's can be summarised thus:

By 1947 the built-up area covered most of the total area of the old city for residential, administrative and commercial uses. Comparison can be made between the maps and aerial photographs in Figure 2.3 and 2.6. Both Niebuhr's map of 1762 and Nallino's map (2.4 and 2.9) of 1938 show that the size of the city remained almost the same. One difference appears from Nallino's map, in which are shown two gates in the northern wall, Bab al-Medina, the original and Bab al-Jadid, a new and wider gate opened after the introduction of the motorcar to Jeddah when the original gate proved to be too narrow.

Another important point is that, while in Niebuhr's map there is no sign of urban development outside the wall, growth had occurred by 1940. The aerial photographs of the 1940's show the direction of the only significant physical expansion which took place outside the wall, the only notable features being Nakatu and Hindawiyah Harris quarters which were the largest areas on development, residential in type, contiguous to the old city on the southern side. The houses were mainly of mud and inhabited by Takarna, West African negroes, who in previous centuries had settled in Jeddah after the pilgrimage. Some scattered development can also be seen around Eve's Tomb and the Turkish barracks (known today as "Qishla", now the military headquarters); some of this is still standing to the east of the lagoon.

Other residential areas are located in different directions around the city about two kilometres from the city wall; al-Baghdadeya to the north on the east side of the Medina road, al Kandarah to the north-east and al Nuzla to the south-east, where a Bedouin resting place developed and grew south of the Qasr (Palace) Khozam and later



around it. Finally there is the fishing village of "al-Ruwais" in the north beyond the coral quarries to its west. The collection of houses in these areas might be considered as small villages around the main body of the city. The houses were compact and close to each other, being mostly mud houses settled by poor people.

The 1948 aerial photograph shows that this first expansion development outside the wall developed further. By the end of the 1940's, the linking of Jeddah by a paved road to Makkah was paralleled by improved local roads and tracks generally radiating outwards from the city centre (Fig. 2.6). The main burst of national economic activity as it affected Jeddah was to follow and make the ancient port and trading centre the main entry point for the growing flood of imports. From the 1940's onward Jeddah's prosperity and the growth of different sectoral functions in the city becomes part of the economic history and geography of Saudi Arabia. These are the themes which are analysed and evaluated in later chapters.

CHAPTER 2

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CHAPTER 3

THE POPULATION OF JEDDAH

As noted in the Introduction to this study, the scarcity of data directly relating to the functional activities of Jeddah City makes it necessary to use many different kinds of indirect evidence to assist analysis and evaluation. Data concerning population, in terms of numbers, structure and trends could therefore be of particular usefulness because some degree of correlation between demographic phenomena and occupations and employment is to be expected. Unfortunately, population data themselves, as will be seen, are extremely limited, in type, quality and in time series.

What data is available is examined in this chapter with a view to arriving at those approximations most relevant to the main objective of the study of urban functions. General trends in aggregate numerical growth throw some light on functional growth, especially when linked in this case with in-migration. The spatial distribution of population in the city, together with an examination of age-sex structure further assists indirectly towards our understanding of the city.

Population Growth (Estimates before 1962)

In Jeddah, as with many other Middle Eastern cities, there are great difficulties in establishing exact historical records and trends; this extends throughout the whole demographic sector. Population figures before 1962 were either local estimates or those of travellers, either Arabs from neighbouring countries or Europeans who visited the city. Great divergencies are revealed in studying these different estimates (see also Chapter 2). Thus, population information was of questionable nature until early 1961 when the first population

census was conducted in order to avoid the problems the government had had, as a result of insufficient records, to enable it to allocate various development programmes.

One of the earliest estimates of Jeddah's population was given in 1050 CE by Nasir-i-Khosrow, ⁽¹⁾ who estimated Jeddah's population to be 5,000 males. This could suggest that the town's total population may have been roughly 10,000 inhabitants in the mid 11th century. This figure appears exaggerated if compared with the estimate given by Ali Bey in 1807 of 5,000 inhabitants. ⁽²⁾ On the other hand this seems to be low in the light of J.L. Burckhardt, who estimated its population in 1814 to have been roughly between 12,000 and 15,000 inhabitants. ⁽³⁾ Dr. Edward Rüppel, who was in Jeddah for the first time in 1827, calculated the inhabitants as then being 40,000 in number, but when he returned to Jeddah for a second time in 1831 he admitted that his "calculation" of the population made on the previous visit was far in excess of the real number, and adjusted the figure to 22,000 inhabitants. ⁽⁴⁾ This could be a result of the fact that he visited the city on the first occasion during the Hajj season. R.D. Hencourt, who went to Jeddah in 1839, put the figure at between 15,000 and 18,000. ⁽⁵⁾ In 1854, Charles Didier estimated the town's population to be between 15,000 and 20,000. ⁽⁶⁾ One can see from the previous figures that all the population estimates lay between 10,000 and 20,000 during the first half of the 19th century.

At the beginning of the 20th century, in 1901, Ibrahim Refaat estimated Jeddah's population to be 25,000, ⁽⁷⁾ while another Egyptian writer, M.L. al-Batanuni in 1909 estimated Jeddah's population as 50,000 inhabitants, including 10,000 Muslim foreigners (non Jeddawi) and 100 Europeans. ⁽⁸⁾ More recently, in 1933 St. John Philby estimated

the population to have been 30,000. Hassan Abu al-Hamayel, a local, estimated the city's total inhabitants in 1934 to be about 60,000 including 15,000 non-Saudi Muslims and about 100 Europeans. ⁽⁹⁾ Finally, K.S. Twitchell who considered Jeddah to be a rapidly growing city, estimated the population of Jeddah in 1958 as 200,000 people. ⁽¹⁰⁾

In the light of the above estimates made by various writers from the early times to the late 1950's there are some indications that the population of Jeddah varied considerably over time. This is supported by indirect historical evidence (see Chapter 2). In general, however, it seems that Jeddah's population until the late 1940's was always relatively small and never exceeded 50,000 inhabitants always confined within the walls of the city. This picture was completely changed at the time when the old walls were pulled down in 1947. Following the establishment of the State of Saudi Arabia a new era of political stability prevailed in the city and internal security for the first time since the early period of Islam and particularly since oil wealth transformed the national economy the rate of population growth increased, sometimes very rapidly. Just one year before the first official census of 1962 the Consultant Engineering Office (quoted by Al Ansari) ⁽¹¹⁾ stated that the World Health Organization's statistical research estimated the actual population of the city in 1959 at 106,000 inhabitants. The same report also asserted that the number of the non-Saudis residing in Jeddah in the same year constituted no less than 35 per cent, mostly workers and technicians, and that this percentage was expected to increase as the demand for more labour rose. The same report indicated that aerial photographic evidence suggested that the town's population was about 24,000 in 1948, just one year after the walls had been pulled down, and 94,000 inhabitants in 1955. Again a report prepared by Wilson Murrow International,

Table 3.1 : Jeddah: Population Estimates and Censuses

Year	Population	Source
1050	5,000	Nasir-l Khosrow
1807	5,000	Ali Bey
1814	12,000	J.L.Burckhardt
1831	22,000	Dr. Edward Ruffel
1839	15,000	R.D. Hericourt
1854	20,000	Charles Didier
1901	25,000	Ibrahim Refaat
1909	50,000	Al-Batanuni, M.L.
1933	30,000	John Philby
1934	60,000	Hassan Abu Al-Hamayel
1958	200,000	Twitchell, K.S.
1959	106,000	The Consultant Engineering office in al-K
1961	150,000	Wilson Murrow Int.
1962	147,900	First National Population Census
1971	381,000	R.M.J.M. Survey
1974	569,204	Second National Population Census
1978	862,362	S.J.R. Survey

Table 3.2 : Average Annual Growth Rate 1962-1978

Total Population		Absolute increase	Average annual Growth rate
1962	1971		
147,900	381,000	233,100	11%
1971 38,000	1974 569,209	177,528	13.5%
1974 569,209	1978 862,362	303,834	11.4

Consultants for the Mayor of Jeddah, provided an estimate of 150,000 for the population of Jeddah in 1961.

These various sets of figures, together with the 1962/63, 1971, 1974 and 1978 census and estimates, are shown in Table 3.1.

Population Size 1962/63 - 1978

It is clear now that Jeddah experienced remarkable demographic growth in the decades following the Second World War. In 1962-63, as shown in Table 3.1, the city of Jeddah had a population total of 147,900 persons according to the first census to be held in Saudi Arabia. ⁽¹²⁾ However the results of this census were soon repudiated by the government because it showed a lower population than expected. It is believed that the reasons for the failure of this census included the ignorance or suspicions of the population concerning the aim of the census. There were rumours that the census was designed to assess the number of adults eligible for military service at the time of involvement in the war in North Yemen. It was further found difficult to contact women at their homes in the absence of their husbands. A shortage of trained manpower involved in data collection, the usage of unskilled staff, and the small amount of publicity and equipment all contributed to inaccuracy in the census.

According to the socio-economic survey conducted by Robert Matthew Johnson, Marshall and Partners in 1971-72, ⁽¹³⁾ prior to the 1973 oil boom and resultant acceleration of the Saudi Arabian economy, the city of Jeddah had then a total population of 381,000 persons. Comparing this with the 1962/63 figures of 147,900 one can see that, accepting the inaccuracies, there had been an increase of about 233,000, giving an average annual growth rate of 11 per cent* (see

* To calculate the annual growth rate of population, we have used the formula below which is one of the most common measures of growth

$$r = \left(\sqrt[t]{\frac{pt}{po}} - 1 \right) \times 100$$

where : po is the population in the first census pt is the population in the second census t is the number of years between the two censuses

r = the annual percentage of change (15)

Table 3.2). A high growth rate, at least of this order, was due to the internal and external migration which has taken place in Saudi Arabia since the end of the Second World War.

In 1974 shortly after the oil boom, the second population census was conducted by the Central Department of Statistics, a census considered more accurate and satisfactory than the first.* According to the 1974 census the city of Jeddah had a total population of 569,204 persons ⁽¹⁴⁾ compared with the 1971/72 survey figure of 381,000. The population appears to have increased by 177,528, an average annual growth rate of 13.5 per cent.

In mid-1978 another socio-economic survey conducted by Sert Jackson International, SAUDCONSULT (CSJR) ⁽¹⁶⁾ indicated that the total population of Jeddah was 862,362 persons. The difference between the two sets of figures (1974-1978) is 303,834 showing an annual growth rate of 11.4 per cent compared with 6.4 per cent for the whole country between 1962-1974. It is recognised that here also there exists large possible margins of error but it can be maintained that such urban population growth rates are not only uncommon in developing countries but also in the case of Jeddah are supported as being of the right order of magnitude by personal and general observation and other measurements. We know first that the city witnessed a remarkable period of physical expansion during the 1970's. In 1971 the built up area extended over some 4,750 hectares; by 1979 this had become 9,700 hectares, more than double in eight years (See figures 7.3, 7.4 and 7.5). It is also clear that this increase in size was not accompanied by any significant fall in the residential use of land in the central areas. Secondly, there has been the increase of national oil revenues and consequential socio-economic expenditure, especially after 1973. For example, the State

* Special measures were taken to publicise the census and its purpose and to ensure that heads of households were available for enumeration and interviewing.

budget in 1970 was \$1 billion and in 1980 was \$90 billion. ⁽¹⁷⁾ This great increase, together with the government's decision to use these funds for a greatly expanded programme of development, as put forward in Five Year Plans, has created more job opportunities, particularly in urban centres. These job opportunities come from establishing more social services and public utilities, firms, many new business opportunities and profitable enterprises, the opening of new departments and offices in the government sector, and the great expansion in education. The sectoral studies which follow illustrate how these trends have all contributed to a rapid population increase in Jeddah. Thirdly, there is the rising standard of living in Saudi Arabia as a whole, a general improvement in health services and a corresponding lowering of mortality, particularly infant mortality, while the birth rate has remained high. The absence of detailed vital statistics does not invalidate the clearly observable trends in natural population growth. The last factor influencing population growth in Jeddah is the immigration of large numbers of people from all over the World, almost entirely to find employment in those sectors in which there developed great labour shortages. This will be discussed in more detail later in this chapter.

Possible Approximate Projections of Growth

One of the most important factors in population study for planning purposes is the population forecast. It is suggested that areas in the throes of spectacular and particularly sudden growth cycles present more difficult problems than those experiencing growth at a slower pace. At the same time this very rapidity of change make the necessity of population forecast more pressing. ⁽¹⁸⁾

On a continued projection of population trend based on 11.4 per cent as

an average annual percentage increase in Jeddah's population which occurred between 1974-1978, the population of Jeddah in 1980 would have been 1,070,187, an increase between 1978-1980 of 207,825 people (see Table 3.3). The previous figure was given for Jeddah's population at the beginning of the Third Development Plan, and projected as 1,836,053 by the end of the fifth year of the Third Development Plan in 1985. Figures for each year up to 1985 are summarised in Table 3.3 following.

Table 3.3 Projected Population Trends : Linear Increases 1978-1985

Date		Total	Yearly increase
1978	(Socio Economic Survey)	862,362	98,309
1979		960,671	
1980	Start of First year of Third Development Plan	1,070,187	109,516
1981	End of First year of Third Development Plan	1,192,188	122,001
1982	End of second year of Third Development Plan	1,328,097	135,909
1983	End of third year of Third Development Plan	1,479,500	15,403
1984	End of fourth year of Third Development Plan	1,648,163	168,663
1985	End of fifth year of Third Development Plan	1,836,053	187,890

The writer believes that this rate of increase is reasonable and approximately matches the Municipality's estimate of Jeddah's population in 1982 as 1,200,000. The estimates projected for the future will depend very much upon government immigration policies, and upon the economic trends as planned in the third and fourth Five Year

Development Plans 1980-1985, 1985-1990. As appears later in this study almost all aspects of Jeddah's social and economic life are now dominantly influenced by national socio-economic fortunes.

The natural increase of any country or city is a result of the natural growth, i.e. the differences between birth rates, death rates, and immigration or a combination of the three factors. It is extremely difficult to calculate the natural increase rate for a country where the vital statistics on birth and death figures are not accurate. For example, most citizens do not register the birth of children, especially those who have been born at home and delivered by midwives. However, it is suggested that the natural rate of increase for the Saudi Arabian population in 1974 was approximately 3.0 per cent. This figure may also be applicable to Jeddah. (19)

Migration

Migration has not only been a contributory factor to the increase in the city's population, particularly between 1962-1981, but has also been an important socio-demographic factor, exercising much influence on the city's way of life. Studying this element is difficult due to insufficient data; for example, no material is available concerning movement within the country, and a comparison of time-series data is difficult.

In 1962-63, the non-Saudis numbered 51,732 persons, 35 per cent of the city's total population according to the first census conducted by the Central Department of Statistics - see Table 3.9. The socio-economic sample survey conducted by RMJMP in 1971/72 provided some useful information on the inhabitants' origins or nationality, but only in very broad terms. According to this survey non-Saudis numbered 158,375 persons or 42 per cent. Thus we can assume that between 1962

and 1971-72 the city of Jeddah had received, on average, some 17,600 immigrants yearly. Jeddah appears to have had the highest percentage of non-Saudis compared to other cities in the Western Region. For example, the percentage of non-Saudis in Makkah in 1962-63 and 1971-72 was 25.5 and 27 respectively. Taif and al-Medina in 1971 show a lower percentage than Jeddah. These percentages were 21 and 17 respectively. (Table 3.4). The 1974 census recorded that non-Saudis numbered 210,331 persons or 37 per cent of the city's total population. On the other hand this suggests that the Saudi population during the period 1971-1974 increased dramatically as shown in Table 3.5, the increase being almost 124,500 persons in just three years. During this period of time Jeddah experienced very large-scale internal migration from rural (nomadic) areas, villages and small towns. This was a natural occurrence since the movement was from areas of lesser opportunity to areas of greater opportunity. The reasons for this migration and other types of migration will be discussed with more detail in another part of this chapter.

The years following the 1974 census seem to have experienced different trends since the contribution of internal migration starts to decline, whereas international migration starts to increase. The socio-economic survey conducted by SJI in 1978 revealed that 455,658 inhabitants, 52.8 per cent of the total population were then non-Saudis.

The degree to which Jeddah became a city of immigrants from the mid 1960's onward can be seen from Table 3.6. Data on the neighbouring cities of Makkah and al-Taif are shown also for purposes of comparison.

Table 3.4⁽¹⁾ : Saudi/Non-Saudi Components of Population in Five Selected Cities in 1971

City	% Saudis	% Non Saudis
Jeddah	58.5	41.5
Makkah	73	27
Medina	83	17
Taif	79	21
Yanbu	94	23

Table 3.5⁽²⁾ : Saudi/Non-Saudi Nationality of Population 1971, 1974 and 1978

Nationality	1971		1974		1978	
	%	Popul.	%	Popul.	%	Popul.
Saudi	58.5	220,800	63	358,873	47.2	407,349
Non Saudi	41.5	120,200	37	210,331	52.8	455,658
Total	100	381,000	100	569,204	100	862,685

Sources: (1) SERT Jackson International/SaudConsult

(2) 1974 Official Census and SERT Jackson International SaudConsult.

Table 3.6 Place of Birth of Households in Three Selected Cities in
1966-1971 (as % of respondents)

Place of Birth	Jeddah		Makkah		al-Taif	
	1966	1971	1966	1971	1966	1971
Same city	71.1	11.8	84.9	41.4	62.4	16.2
Another city within Western Province	4.8	11.3	2.3	3.2	10.2	15.1
Rural area within Western Province	1.7	8.4	1.2	8.5	4.8	14.4
Rural area within Asir	3.1	12.3	1.0	4.7	3.8	14.2
Rest of Saudi Arabia	2.4	3.4	0.9	2.4	6.5	5.5
Outside Saudi Arabia	17.0	52.9	9.8	40.8	12.4	34.8
Outside the city	28.9	88.2	15.1	59.6	37.6	83.8
" " (inside Saudi Arabia)	11.9	35.3	5.3	18.6	25.2	49.1

Source: Robert Matthew, John Marshal Partners, Socio-economic Survey of Western Province, 1971.

One especially significant fact is the large decline between 1966 and 1971 of the proportion of Jeddah born residents, a trend applying not only to Jeddah but also to most cities in the country. In 1966, 71.1 per cent of the city's householders were born there whereas this percentage was reduced by 1971 to 11.8 per cent. The "pull" factors in Jeddah are remarkably stronger than the "push" factors. Secondly, within the Western Province, in 1971 Jeddah had the highest proportion of those who were born outside Saudi Arabia, 52.9 per cent, in comparison e.g. with 34.8 in al-Taif. Thirdly, the proportion of householders born in rural areas is similar to that of Makkah, but, interestingly, lower than at Taif.

Regarding ethnic origins, few people in Jeddah today can trace their origins to one of the early Islamic or pre-Islamic dominant tribes. However, some of the leading families in Jeddah nowadays consider themselves as "old" immigrants who came to the area before the establishment of the Saudi kingdom. These settlers appear to have become totally integrated and hardly distinguishable from the natives of the area. They are, however, also other identifiable groups from Ottoman Turkey, Persia, Bukhara, and from other Arab countries such as Southern Yemen (Hadrami), Egypt, Syria, Yemen, Iraq, Palestine, Morocco, Sudan and Tunisia, all of which settled in Jeddah over the centuries and now hold Saudi nationality. Other groups which can be classified as "new" immigrants are those who arrived at a later stage mainly since the 1940's. Some of them hold Saudi nationality and some do not. The distribution of Jeddah's population by citizenship for 1962 is given in Table 3.7.

Table 3.7 Population Distribution By Nationality 1962

Nationality	Population	Percentage
Saudi Arabian	96,168	65
Yamani and Hadrami	30,418	20.5
Palestinian and Jordanian	5,910	3.9
Egyptian/Sudanese	3,251	2.3
Lebanese/Syrian	1,098	0.8
Other Arabian	349	0.3
African/non-Arab	5,924	4.0
American/European	850	0.6
Asian	2,806	1.9
Other nationalities	1,126	0.7
Total	147,900	100

Source: Population Census 1962.

The 1974 census provided data on the nationality of residents on the same categorisation basis as the 1962 census and provides, additionally, data on the sex distribution within various groups: see Table 3.8 . If we assume equal accuracy in both census, which officially is not the case, there are some trends which are identifiable. First, and this may be the result of improved census taking in 1974, the proportion and numbers of non-identified nationalities fell sharply between 1962 and 1974. Secondly, the proportion of Saudi Citizens fell by 2 per cent whilst that of the Yemenis (North and South) rose by 3 per cent. The proportion of non-Arab Africans also fell slightly although that of the Asians increased. Overall, the main conclusion to be drawn from Tables 3.7 and 3.8 is that the number of non-Saudis increased between 1962 and 1974 slightly faster than that of the Saudis and the proportional importance of the several groups remained remarkably similar, implying that the considerable absolute total increase was based on the same type of attraction and employment opportunities during the whole period.

Since 1974, although there are no statistical data available except for the whole country, a more recent trend is observable, the beginning of which is indicated by the five-fold increase in the number of Asians between 1962 and 1974. Very large numbers of Korean and Filipinos have recently been arriving in contract work gangs employed almost entirely on major construction projects such as the new airport, and infrastructural work. Their impact on the city is to some extent limited by their group contract organization and group accommodation specially provided, usually outside the city, by the few major companies involved. Their personal disposable income is low and their food and other supplies, though locally purchased are centrally organised. Pakistani workers are usually employed as

individuals or small groups by a larger number of smaller companies. Their employment is more varied and ranges from clerical work to labouring. This group has a very considerable impact on housing, medical services, public utilities, and retail trade and similar services since they, as with other immigrant groups, are responsible for meeting their own needs. Lastly there has been, since 1975, the importing of large numbers of males and females from Asia, in particular Sri Lanka and Phillippines for domestic service. Their housing, food and clothing is usually supplied by their employers. During the period 1977 to 1982 their numbers probably grew to over 20,000, and although their wages are relatively low their aggregate purchasing power, as well as demands on medical services and public utilities, have become very large.

Table 3.8 : Population Distribution By Nationality 1974

Nationality	Male	%	Female	%	Total	%
Saudi Arabian	194,386	54.2	164,487	45.8	358,873	65.0-
Yamani and Hadrami	93,965	69.1	41,996	30.9	135,961	23.8+
Palestinian & Jordanian	11,339	5	9,837	46.5	21,176	3.8-
Egyptian/Sudanese	8,651	59.3	5,937	40.7	14,588	2.5+
Lebanese/Syrian	2,082	59.3	1,428	40.7	3,510	6.6-
Other Arab	980	55.4	789	44.6	1,769	0.3
African/Non-Arab	7,115	46.0	8,372	54.0	15,487	2.7-
American/European	2,344	59.8	1,575	40.2	3,919	0.7+
Asian	7,992	57.6	5,862	42.4	13,854	2.5+
Other Nationalities	32	47.8	35	52.2	67	0.01-
Total	328,886	57.7	240,318	42.3	569,204	100

Source : Population Census 1974.

The distribution of non-Saudis between the various quarters of the city, according to the 1962 census, is shown in Table 3.9 but unfortunately the national origin of these non-Saudi citizens is not available. Al-Quryat quarter ranked first for non-Saudi citizens, 66 per cent; in this case believed to be originally from Central Africa, mainly Nigeria. Next came Al-Thaalba with 63 per cent of its total population non-citizen, mostly originally coming from North and South Yemen (Hadramut), Al-Bukharia (51%), Al-Sabakha (49%), Al-Sahiefa (49%) and al-Sabeel (47%). The availability of relatively cheap accommodation and shared housing were the main factors in creating such high percentages of non-Saudis in these quarters. In the rest of Jeddah's quarters, such as Al-Sharafeya, Al-Baghdadeya, Al-Ruwais Alsham and Al-Hindaweyan non-Saudis accounted for less than 30 per cent of the population, probably because of the lack of vacant land where they could build or occupy cheap accommodation.

It is not possible to establish any firm statistical correlation between the various other immigrant groups and functional occupations in the city but the following general pattern is accepted as typical. The Hadrami from South Yemen (who together with the Yemenis - from North Yemen made up over 20 per cent of the total population) are recognised as mainly being self-employed in commerce and business services. They are usually clothiers, grocers, sellers of kitchen utilities and china, and bankers. The Yemenis are engaged in a wide range of employed activities as bakers, carriers, builders, retailers, sweepers and sellers. Most Yemenis arrived in Jeddah during the Yemen Wars and tend to segregate themselves as groups wherever cheap accommodation is available.

The second largest non-Saudi group are non-Arab Africans mainly from Nigeria and Mali known here as Takarna. Mostly living in groups

Table 3.9 : Distribution of Population between Quarters of Jeddah Divided into Sex, Nationality and their Percentage of Total Population (Census 1962)

Quarter	Total	Sex				Nationality			
		Male	%	Female	%	Saudi	%	Non-Saudi	%
Al-Yamen	7,648	4,482	(59)	3,166	(41)	5,059	(66)	2,589	(34)
Al-Sham	2,896	1,643	(57)	1,253	(43)	1,850	(64)	1,046	(36)
Al-Baghdadeya	8,199	4,703	(57)	3,496	(43)	5,820	(71)	2,379	(29)
Al-Sharafeya	7,398	3,954	(53)	3,444	(47)	5,946	(80)	1,452	(20)
Al-Nuzla alshamalia	1,380	708	(51)	573	(49)	1,176	(85)	204	(15)
Al-Ruwais	8,312	4,435	(53)	3,877	(47)	7,106	(85)	1,206	(15)
Al-Mazloun	5,646	3,240	(57)	2,406	(43)	3,737	(66)	1,909	(44)
Al-Saheifa	12,033	7,081	(59)	4,952	(41)	6,093	(51)	5,940	(49)
Kilo-3	8,594	4,709	(55)	3,885	(45)	7,049	(82)	1,545	(18)
Barra	7,645	4,658	(61)	2,978	(39)	4,222	(55)	3,423	(45)
Al-Sabakha	1,784	1,036	(58)	748	(42)	913	(51)	871	(49)
Al-Hindaweya	9,104	4,947	(54)	4,157	(46)	6,486	(71)	2,618	(29)
Al-Thaalba	5,227	2,927	(56)	2,300	(44)	1,931	(37)	3,296	(63)
Al-Qurayat	4,705	2,538	(54)	2,167	(46)	1,581	(34)	3,124	(66)
Al-Amareya	5,601	3,332	(59)	2,269	(41)	3,537	(63)	2,064	(37)
Al-Kandara	13,431	7,406	(55)	6,025	(45)	10,063	(75)	3,368	(25)
Al-Sabeel	20,285	11,845	(58)	8,440	(42)	10,746	(53)	9,539	(47)
Al-Bukharia	8,776	5,079	(58)	3,697	(42)	4,312	(49)	4,467	(51)
Al-Nuzla al Yamaniah	4,552	2,442	(54)	2,110	(46)	4,210	(92)	342	(8)
Al Nuzla al Sharkia	3,982	2,128	(53)	1,854	(47)	3,638	(91)	344	(9)
Ghulail	702	361	(51)	341	(49)	693	(99)	9	(1)
Total	147,900	83,753		64,147		96,168		51,732	

Source : Central Department of Statistics, Population Census 1962-63, Ministry of Finance and National Economy, Al-Riyadh, Saudia Arabia p.54.

in "shanty towns" (see Chapter 7), these people are mainly employed as car cleaners, carriers, builders and drivers. The women's jobs on the other hand are usually as housemaids and nutsellers. Many of this last group are illegal migrants who contribute little to the country's economic development, many being illiterate and unskilled. Palestinian and Jordanian Arabs, the third largest group are mostly well educated and are engaged in a wide range of usually "white-collar" activities in trading, educational services and office work.

The Forces Encouraging Immigration To Jeddah

The reasons behind these strong migration trends are, as always, a mixture of external "push" or urban "pull" factors. It is suggested that the causes are varied and complementary, and involve both "push" and "pull" factors both at the origin and destination of migrants.⁽²⁰⁾

1. Push Factors

Such factors have become less important to internal migration during recent years as national socio-political stability increased and as central government support for country dwellers during periods of natural catastrophe, such as drought, became more generally available. The last internal conflicts, those associated with dissident lkhway, appeared in the 1930's but the effects of drought in driving Bedouin off the desert ranges were very clear as late as 1960.⁽²¹⁾ More important in recent years has been the relative decline of rural incomes compared with those available in urban centres. As El Mallakh has pointed out, ⁽²²⁾ institutional and environmental obstacles to improving agricultural productivity have encouraged a flight out of farming, reducing the agricultural labour force from 40 per cent of the total in 1975 to 25 per cent in 1980.

Externally originating migrants have been "pushed" by almost

every possible force, ranging from alien occupation, as in Palestine and war conditions, as in Yemen and more recently Lebanon, to deteriorating economic opportunities at home, as in Egypt and Pakistan.

2. The Urban "pull" Factors

In general, cities generate several "pull" factors tempting migrants to settle in them. It is suggested that the process of urbanisation or at least the "rush to the towns" in less developed countries has been particularly rapid since the mid-twentieth century as the gap between economic opportunities between urban and rural areas has widened, and government policies have favoured the localisation of most modern economic activities in cities rather than in rural areas,⁽²³⁾ so better employment opportunities in the city is one of the most important factors, especially in large cities where construction and other industrial activities are growing quickly. The relatively superior living conditions and other facilities in large cities are additional "pull" factors.

If a comparison is made between Jeddah and other Saudi cities it is possible to link some specific pull-attractions with the functional activities of Jeddah. Riyadh, as the capital city, for example, attracted particularly Saudi citizens from rural areas who responded to the growth of non-specialised job opportunities, especially in government service and for other social and economic reasons. In the new cities of the Eastern Province, i.e. Dammam, Dhahran and Al-Khobar, the at first specialised and then less specialised demands of an expanding oil industry offered at first many specific employment opportunities and later the more general attractions offered by vigorously growing, effectively new, urban centres.⁽²⁴⁾ Makkah, so far as political controls have allowed, attracted settlers above all

for religious reasons, whilst Madinah combined religious importance with regional market and administrative significance. Jeddah, on the other hand, exerted "pulls" which were associated with all of the other cities' attractions but with these grouped mainly in the category of economic attractions. As noted in Chapters 4,5 and 6 Jeddah since the 1930's has become a regional market, supply and administrative centre for most of the Western region. As the most important entry point for non-Saudi pilgrims, for many Moslems it also became an attractive centre for those who wished to live near to the religious heart of Islam, Makkah, but also had to support themselves by economic activity. The last mentioned economic opportunities were far greater in volume and range in Jeddah than in the Holy Cities. Whilst not being the national capital, Jeddah nevertheless became the headquarters for several government agencies, the diplomatic centre insofar as all embassies were located in the city, the largest commercial city in the Western Region, the main international airport for the country, the main commercial seaport in the country, an important University town with satellite colleges in the Western Region and a banking centre. This mixed attraction situation directly created new jobs and businesses. A stream of foreigners appeared to fill skilled as well as unskilled jobs.

The dominant effect of socio-economic factors on migration decision can be illustrated by a sample study covering all sections of the population carried out by SJI /SaudConsult (Table 3.10). According to this study 73 per cent of householders stated that the main reasons for moving to Jeddah were to find employment, higher income or business opportunities in the city.

Table 3.10 : Reasons For Moving to Jeddah Expressed by Heads of Household 1978

Main Reason for Move	Number of House-holders in sample	Percentage of Total
Business/Employment	127,144	73.3
Stay with family	7,636	4.4
Join Relative or friends	1,587	0.9
Born in this house	874	0.5
Education	575	0.8
Other/not stated	35,673	20.1
Total	173,489	100.0

Source : Sert Jackson International/Saudconsult Socio-Economic Survey, Volume 3, p.37, 1980.

As a result of in-migration, Jeddah became over a long period a cosmopolitan city which has influenced society and economy in several ways which can be summarised as follows:

A. Social influences

The generally held opinion, also expressed in the local press is that a growth in laxity of behaviour and of crime is associated with the vast influx of immigrants from a great variety of places of origin. This cannot be proven statistically but all observations confirm that, partly because immigrants are dispensed occupationally in many different types of competitive and small-scale employment and are therefore not as easily controlled as in large specialised work-forces (see pp. 68), Jeddah has become increasingly in recent years a city of individualists. The traditional community loyalties and disciplines have become weakened.

Language : Linked with the previous point is the fact that Jeddah has become a city of many languages. Even the Arabic language has incorporated many immigrant introductions and the dialects of neighbouring Arab Countries have also been adopted.

Food : Several types of food have been introduced into the city which can be traced back to different nations, a result of the fact that each group of immigrants has brought their own way of cooking with their own foodstuffs, for example Tamez (which means clean), Ruz bukhari (rice from Bukhara), yagmosh and Fermouza, from Bukhara. Zorbian, Beriani, Laddo (a kind of sweet) and labaneya, all from India. A certain limited specialisation in some services, e.g. in restaurants has developed along with this, but on the whole the main effect has been to make the population as a whole remarkably cosmopolitan in its tastes.

Dress: Jeddah has experienced several type of dress. When under Ottoman influence the style of clothing adopted was primarily of Turkish design. Other countries have exerted some influence, but following the creation of the unified Kingdom, Arab dress became predominant, this running counter to other trends.

Racial effects: Jeddah has always experienced racially varied migrants since its foundation, and a mixture of physical types of humanity has always been normal. Islamic law and observances have always tended, in practice, to overcome the divisive effects experienced by many countries in this context.

Religious differences: A large number of non-Muslim expatriates have been attracted to the country as a whole and cities in particular as a result of the oil-wealth created boom, especially after 1975. Jeddah never previously received a large number of non-Muslim migrants and

there has appeared, recently, a new phase in which concern is being expressed over the religio-cultural effects of this movement.

B. Demographic Influences

It was noted earlier that immigration has had considerable influence on the demography characteristics of the city. Age structure has been affected since most of the migrants are relatively young i.e. in the working age groups predominantly in the 20 and 30 year scale; sex structure has also been disturbed, with the appearance of an imbalance of males relative to females (see Figs. 3.3 & 3.4). These skewed characteristics of age and sex structure are both the results of growth trends in the city's activities and causative influences on such trends, mainly through economic linkages.

C. Economic Influences

As always occurs in areas of large-scale immigration the laws of demand and supply are affected. The supply of goods must be raised to meet the greatly increased demand. One negative effect is the raising of prices. For example, it has been noticed in the city that not only has the price of the land increased with each wave of immigration but also the prices of all types of real estate, foodstuff and all types of merchandise. Moreover, immigrant workers create selectively great demands for some special type of merchandise. For example many workers in the city buy electrical goods and send them back to their home country taking advantage of the low import tariffs in Saudi Arabia. This will be discussed further in subsequent chapters.

It also seems, if the present rate of immigration continues, that the pressure on demand for public utility services and other facilities may become acute. Already problems relating to traffic congestion, water supply, medical facilities and certain types of

housing as well as other sectors are considerable.

As appears in Chapter 2 as well as earlier in this chapter, and as will be examined in sectoral detail later, many of Jeddah's functional activities have for centuries been derived from its international status. This has meant that Jeddah has always had a high degree of cultural exposure to external influences, has had an ethnically mixed population and, normally, a not insignificant number of transient and other immigrants. The question today, not only in Jeddah but in Saudi Arabia as a whole, as well as in the other oil-exporting States of the Peninsula, is whether the present scale of immigration and alien culture impact is acceptable on socio-political grounds, and whether present and possible future functional activities have become totally dependent on the present level of immigrants in the population.

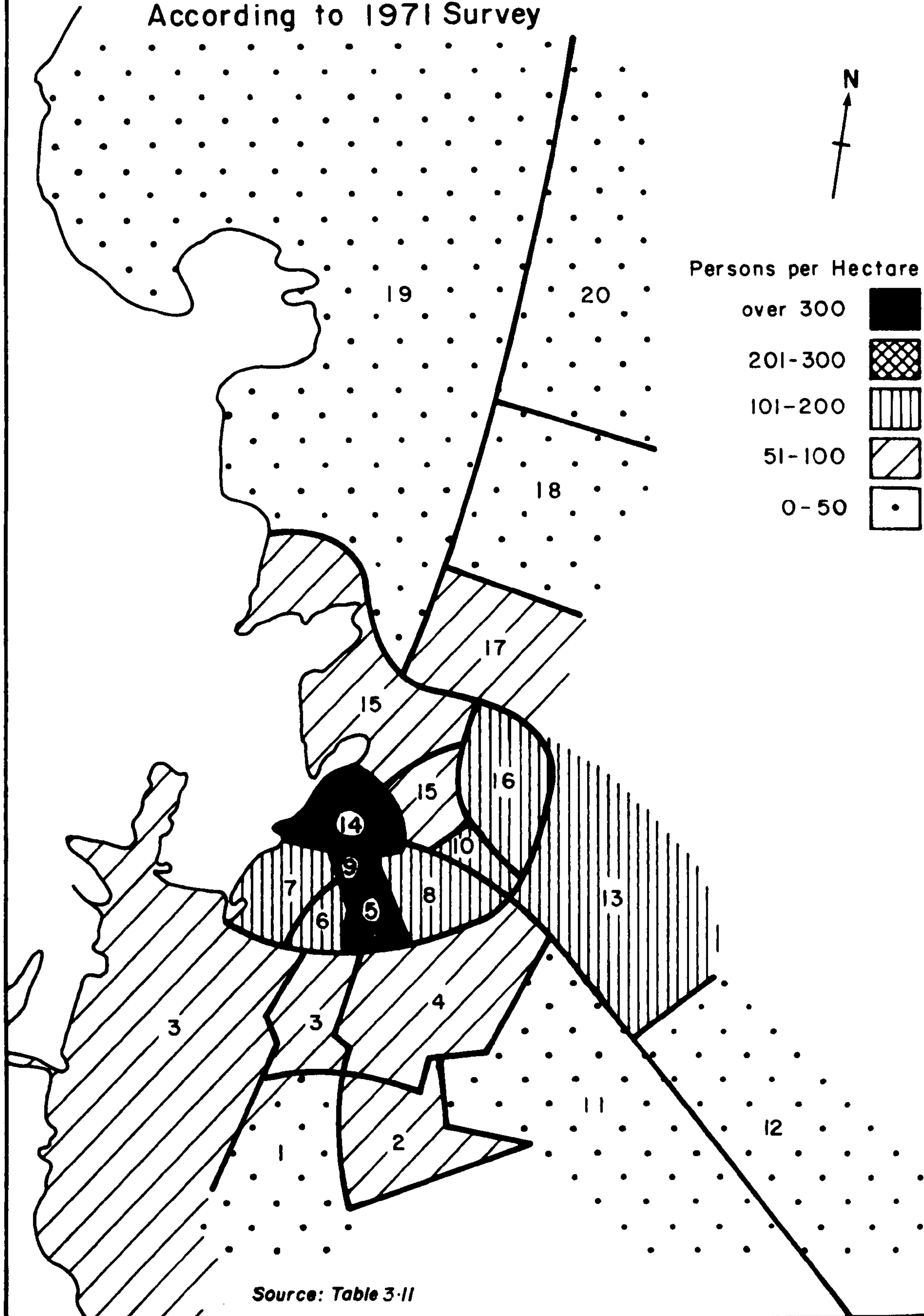
Population Density and Distribution

Jeddah has a spatially variable population density. This can be understood by viewing Figs. 3.1 and 3.2 which show the population density in the city quarters as recorded in 1971 and 1978.

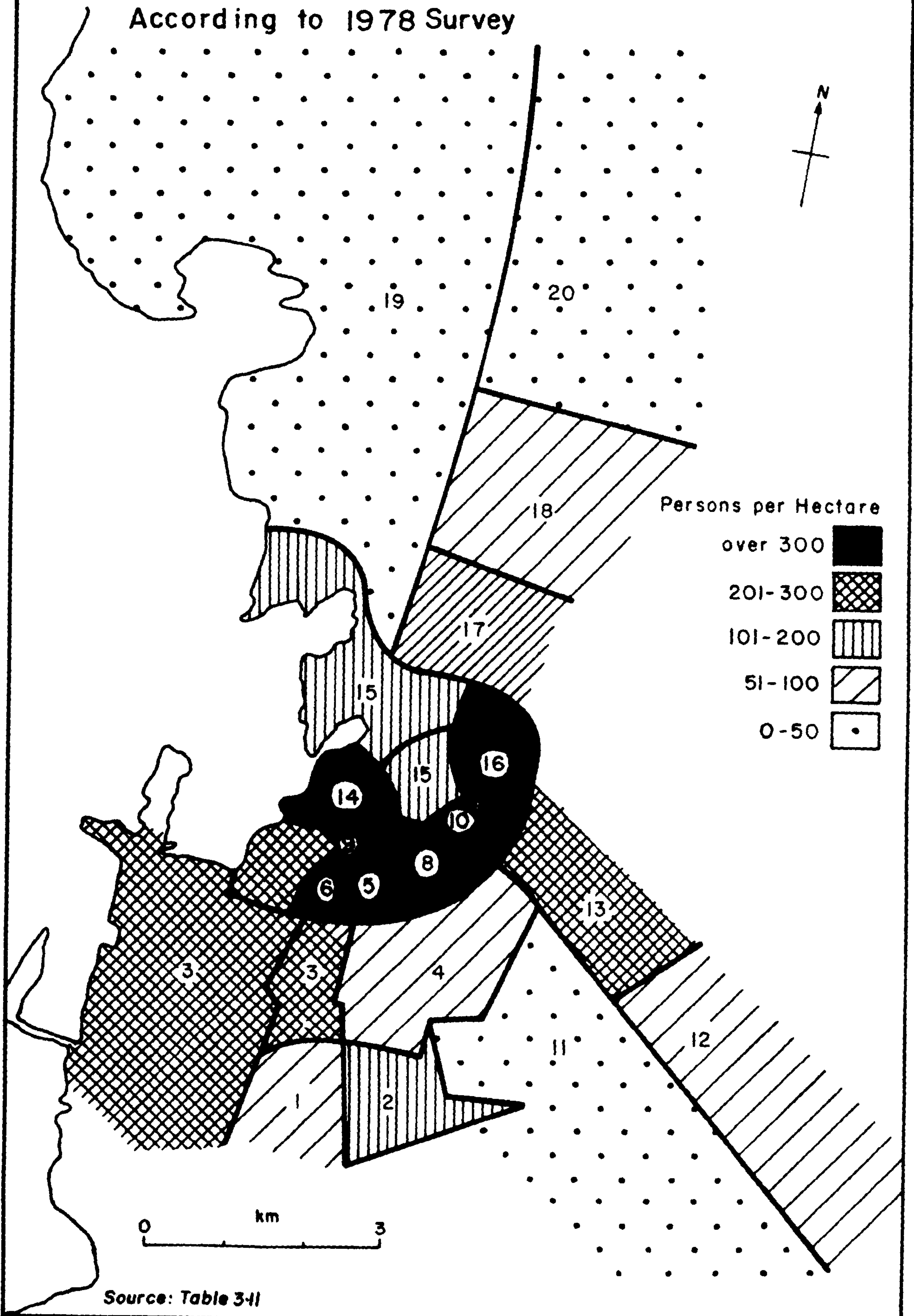
The average population density over the whole city of Jeddah was 41 persons per hectare in 1971, increasing to 91 persons in 1978. In 1971 the highest residential densities were in the three quarters of the old town (see Table 3.11), where the urban density was 300-500 persons per hectare. The lowest densities were in six residential quarters where there were under 50 persons per hectare (Figs. 3.1 and 3.2)

By 1978 some increase in urban density had taken place within the new residential quarters of the middle and outer zones of Jeddah, whereas the inner and central business district maintained the same

Fig.3-1 Density of Population in Each Quarter
According to 1971 Survey



**Fig.3.2 Density of Population in Each Quarter
According to 1978 Survey**



Source: Table 3-11

Table 3.11 : Population Density in Jeddah, 1971 and 1978

Qarter	Population Density per Hectare		1971-1978 percentage change per hectare
	1971	1978	
1 Karantina	48	55	15
2 Ghulail	67	158	136
3 Qurayat	73	204	179
4 Al-Nuzla al Yemeneya	76	58	- 24
5 Bukharia	528	651	23
6 Hindaweya	116	802	591
7 Al-Shati	175	300	71
8 Al-Sabeel	188	387	106
9 Harat Barah	373	314	- 16
10 Al-Saheifa	192	441	130
11 Al-Nuzla Ashrkeya	29	49	158
12 Kilo 6-10	26	79	204
13 Kilo 1-5	129	266	106
14 Hart Yamen & al Sham	566	411	- 27
15 Al Bugdadoya	51	188	268
16 Al-Kandara	171	305	78
17 Al-Sharafeya	55	245	345
18 Bani Malik	11	51	364
19 Al-Ruwais al-Hamra	5	16	220
20 Musharafah	5	37	640
Total Haras	41	91	122

Source : R.M.J.M. Socio-economic Survey 1971

S.R.J. SaudConsult, Socio-economic Survey, 1978.

densities as in the 1971 survey.

High population densities recorded in both surveys for the old town were related to several factors such as cheaper accommodation, shared dwelling and low income groups which were all concentrated in this part of the city. High densities were recorded for two residential quarters within the central business district where cheaper accommodation was available in Jeddah's traditional housing, a great attraction to immigrant workers. In addition, the built-up area here is closely packed with no wide streets or squares, and its buildings are permanently occupied and, accordingly, it is crowded throughout the year.

Other quarters of Jeddah, on the other hand, the northern quarters, and in particular, Al-Ruwais, Al-Hamra, Medina road and Mushrafa are the least densely populated areas, for they contain a mixture of mansions and villa-type homes which are surrounded by gardens and yards. On the other hand, the southern and eastern quarters are densely packed areas, but less so than the central area. In the eastern part almost all the owners of the buildings are permanent citizens.

The distribution of population within the quarters shows that densities in three quarters have decreased in 1978, Hart al-Yeman al Sham, Hart Barah and Anuzla al Yamaneya. This is because some citizens who had lived in this part of the town for a long period of time preferred to sell their homes and buy cheaper ones in the middle and outer zone of the city. As far as can be ascertained from random surveys these moves have not been associated with major changes in the functions performed in these quarters. The previous owners, mainly long term Saudi residents, appear to have responded to the higher incomes (resulting from the diffusion of national oil wealth) and

to the rising prices obtainable for property, by moving upmarket to new higher-quality residences further from the centre. On the other hand, some quarters have shown a relatively small increase since 1971, others especially to the west, such as Al-Hindaweya, Qurayat Thaalba and Al-Shati quarters have experienced a large increase in the number of residents. Two reasons are behind this increase, firstly, the nearness to Jeddah Seaport, and secondly, to the expansion of the petromin industrial district.

Population Structure

In this section such factors as age and sex structure and the economic structure of the population of Jeddah City will be examined. Because of their importance, as well as the availability of some useful data, age and sex structure will be studied in greater depth. Indeed demographic information for age groups and sex structure is a major requirement for any form of socio-economic understanding, let alone planning, such as education and employment.

Age Structure

Age structure is determined mainly by fertility since the number of children being born in a country in any one year obviously affect the future age structure. Other variables such as migration, war, famine and economic recession may also affect age structure, either through influencing fertility rates, or by producing abnormal death rates within a certain age structure. (25)

As noted in Figures 3.3 and 3.4 the population pyramid of Jeddah has a broad base that tapers gradually with age. This kind of age structure of a population means that the young groups form a high proportion of the total population, in particular the group under

10 years of age (see Tables 3.12 and 3.13). These pyramids show a nearly normal distribution of age structure because Jeddah, during that period of time, had not passed through unusual conditions such as war, for instance. However, a degree of abnormality is evidenced by the different age-curves for males and females, the male-age groups between 25-44 years appearing inflated for reasons which can be attributed to the age-sex selective migration which includes a high proportion of young, adult male workers, especially in the above mentioned age groups.

Commonly in the study of age structure, population is divided into three main groups, the children or young under 15, the adults from 15 to 64, and those aged 65 and over,⁽²⁶⁾ a classification which conforms to that of the United Nations.

1. The young (under 15 years)

Tables 3.12 and 3.13 show that the city continues to have a very youthful population. With 41.2 per cent of the total under 15 years in 1974, inspite of the increase in immigrants, the majority of whom are of working age, the 1978 population of Jeddah was still young with 41.1 per cent in the under 15 age group. The absence of vital statistics on the one hand and of detailed data on the family status of immigrants on the other makes it impossible to prove statistically the reasons for this very large proportion of children given the skewed male : female ratio in the child-bearing age-groups. Here we can only note that the percentage of women never married at age 40-44 was estimated as low both in 1974 and 1977, 1.5 per cent and 1.6 per cent respectively.⁽²⁷⁾ The fertility rate is also believed to be high. The population of Saudi nationality is particularly affected by these factors, as also by the effect of improved social and medical

Table 3.12 : Age Group, Sex Ratio for Jeddah City in 1974

Age group	Total	%	Male	Female	Male per 100 Female
0 - 4	86,978	15.5	44,813	42,165	106.3
5 - 9	80,199	14.2	41,266	38,933	105.9
10 - 14	64,783	11.5	35,154	29,629	118.6
Young People	231,960	41.2	121,233	110,727	109.4
15 - 19	60,524	10.7	35,414	25,110	141.0
20 - 24	56,049	9.9	35,173	20,876	168.4
25 - 29	50,161	9.0	31,736	18,425	172.2
30 - 34	40,076	7.1	25,191	14,885	169.2
Younger adults	206,810	36.7	127,514	79,295	160.8
35 - 39	33,944	6.0	21,575	12,369	174.4
40 - 44	26,441	4.7	16,911	9,530	177.4
45 - 49	17,444	3.2	11,505	5,939	193.7
50 - 54	15,768	2.8	9,473	6,295	150.4
54 - 59	7,737	1.4	4,889	2,848	171.6
60 - 64	9,965	1.8	5,420	4,545	119.2
Older adults	111,299	19.9	69,773	41,526	168
65 and over	12,239	2.2	6,331	5,908	107
Not Stated	208	-	170	38	-
All ages	562,516	100	325,021	237,495	136.8

Source : Population Census 1974

Table 3.13 : Age Group, Sex Ratio for Jeddah City 1978

Age group	Total	%	Male	Female	Male per 100 Female
0 - 4	125,925	14.6	62,767	63,158	99.3
5 - 9	125,442	14.5	63,848	61,594	103.6
10 - 14	103,408	12.0	53,682	49,726	107.9
Young People	354,775	41.1	180,297	174,478	103.3
15 - 19	93,702	10.9	47,311	46,391	101.9
20 - 24	82,018	9.5	43,447	38,571	112.6
25 - 29	82,363	9.6	44,758	37,605	119.0
30 - 34	64,906	7.5	39,008	25,898	150.6
Younger adults	322,989	37.5	174,524	148,465	117.5
35 - 39	56,833	6.6	35,190	21,643	162.5
40 - 44	41,009	4.8	25,783	15,226	169.3
45 - 49	31,073	3.6	19,987	11,086	180.2
50 - 54	21,988	2.5	14,605	7,383	197.8
55 - 59	11,293	1.3	8,165	3,128	261.0
60 - 64	10,879	1.3	6,923	3,956	175.0
Older adults	173,075	20.1	110,653	62,422	177.2
65 and over	11,523	1.3	6,831	4,692	145.5
All ages	862,362	100	472,305	390,057	121.0

Source : Calculated from Socio-economic Survey 1978.

facilities on reducing infant mortality. The same factors may also apply to the unknown but believed to be much lower proportion of non-Saudi immigrants who are married.

2. The adult group (15-64 years)

From Tables 3.12 and 3.13 it appears that the proportion of the adult group increased only 1 per cent, from 56.6 per cent in 1974 to 57.6 per cent in 1978. However, the growing attraction of Jeddah as a place of residence or work is demonstrated by the fact that during the two periods, the number of young adults of working age increased from 206,810 to 322,989 and the older adults (35-64) from 111,299 to 173,075. (see Tables 3.12 and 3.13).

3. The aged group (65 and over)

In general, the proportion of this group is very small compared to the other two groups. It declined from 2.2 per cent in 1974 to 1.3 per cent in 1978.

In the light of these facts, it can be said that immigration can be considered to be the main factor which has caused some deviation from the normal distribution of age groups. Generally, Jeddah can be considered young in its age structure, the young groups having a high proportion compared to the very low proportion in the aged groups, the only one to have shown a decrease.

Finally in a population which has an age structure such as Jeddah, we would expect high birth rates, low death rates, and rapid growth in future years and this structure also affects the social, family, household and economic composition of the population, and most of the activities of the city.⁽²⁸⁾

Sex structure

Sex structure is an important element in a society such as the Saudi Arabian where women are restricted in the type of work they are allowed to do. In this case, the sex ratio can play a significant role in the economic and social structure of the society. Saudi Arabia as a whole has an excess of males over females, because of the under-enumeration of women, the nature of society which favours male children and male adults, and of course the predominance of males in the non-Saudi population. Jeddah is no exception; the number of males, as Tables 3.14 and 3.15 show considerably exceeds the number of females.

Table 3.14 : Sex Ratio in Jeddah 1962-1978

Year	Male	%	Females	%	Total	Deficiency of fem- ales	Male per 100 Fe- males
1962	83,753	56.6	64,147	43.3	147,900	19,606	130.5
1971	206,783	54.3	174,217	45.7	381,000	32,566	118.6
1974	325,021	57.8	237,495	42.2	562,516	87,526	136.8
1978	472,305	54.8	390,057	45.2	862,362	82,248	121.0

Source: 1962 First census - 1971 Socio-economic survey.
1974 Second census - 1978 Socio-economic survey.

In 1962-63 the percentage of males was 56.5 per cent as compared with 43.4 per cent of females (see Table 3.9). This is the case in all the city's quarters. In detail there is greater dominance of males in quarters connected with a high percentage of non-Saudi immigrants such as Al-Qurayat, al-Thaalba, and Al-Bukharia. However, there is no data in this census to show the percentage of males and females within the migrants themselves.

According to the 1971 data there is also an excess of males in the city as 54.3 per cent of its population are males. Other cities of the Western Province of Saudi Arabia show a similar excess of males having percentages of 51.7 in Makkah, 50.8 in Medina and 51.9 in Yanbu. Jeddah shares with other big cities in the developing countries this excess of males over females. For example, Nairobi in Kenya in 1962 shows 187 males per 100 females, Karachi in Pakistan in 1961 shows a 132 sex ratio, and Istanbul in 1965 shows a 117 sex ratio. (29)

In the 1974 census the percentage of males over females was the highest recorded, reaching 57.8 per cent as compared with 54.8 per cent in 1978. As far as the records indicate the sex ratio for Jeddah City decreased from 130.5 males per 100 females in 1962 to 118.6 in 1971, rose to 136.8 in 1974 and then decreased to 121.0 in 1978. One reason for such a relationship could be the frequency with which single or independent males of working age migrated to Jeddah during the 1971-74 period as a result of the increasing revenue from oil.

However, another explanation for the high sex ratio in 1962-63 could be the lower accuracy of this census compared with the 1974 census and the probable considerable underestimation of females.

The demographic sex imbalance is not as important, however, as the role of each sex in society and the way it affects life in general and economic activities in particular. The importance and effectiveness of one sex is determined by social and economic reality in any society. In Jeddah the economically active population consists mainly of males rather than females. This will be discussed in detail in the following section:

Economic structure

The economic structure of Jeddah's population is examined here in terms of economically active and inactive components as well as the

occupational structure of the city's population as a whole. This will help to provide a useful background for understanding the city's economic function which is discussed in depth in chapters 4 and 5 where the commercial and industrial structure of the city are examined.

It is generally accepted for comparative purposes that the working age group is between the ages of 15 and 65. This represents the majority of the working population or potential labour force. The non-working categories, or those who are not economically active, are children under 15 years of age and the old people who are over 65 years of age.

Table 3.15 : Distribution of Working and Non-Working Population of Jeddah 1974 and 1978

Year	Sex	0-14 Years	15-64 Years	65+ Years
1974	Male	21.5	35.0	1.2
	Female	19.7	21.5	1.0
	Total	41.2	56.6	2.2
1978	Male	20.9	33.1	0.8
	Female	20.2	24.5	0.5
	Total	41.1	57.6	1.3

Source : Derived from Tables 3.12 & 3.13.

We observe from Table 3.15 that in 1974 the population of working age (16-64 years of age) formed 56.6 per cent of the total population in Jeddah. The proportion for 1978 was nearly the same as that of 1974. (Table 3.15) Students at all educational levels are excepted from the employed population, which swells the number of dependents.

A dependency factor with more than 40 per cent of the population lying outside the potential labour force is a common phenomenon in developing countries that have a young, rapidly growing population.⁽³⁰⁾ Further, a comparison between the proportion of the population of working age (the potential labour force) 56.6 per cent, and of the working population (including employed and seeking employment) strengthens this pattern of dependence on a small actual work-force. In 1974 the occupied population in Jeddah was 167,024, 29.7 per cent of the total population.

The role of women is clearly the most important factor here in influencing the economic life of the city. The proportion of recorded working females (1.4 per cent of the total population in 1974) is very much less than that of females of working age (21.5 per cent of the total population). This low female economic activity rate is attributable to prevailing economic and social conditions. This is not only true of Jeddah but in the whole country, and in most conservative Muslim countries, the figures for other such countries i.e. Egypt being 6.1 per cent and Pakistan 3.8 per cent.⁽³¹⁾

In Saudi Arabia women are prevented from working except in some specific jobs such as teaching, medicine and more recently social work and radio. In addition to this, the government's immigration policy limits the number of foreign female immigrants, and high child-bearing rates further minimise a mother's chances of pursuing economic activities.

Accordingly, the size of the available labour force is very small in the light of the great work demands made by the economic development which has taken place in Saudi Arabia, especially since 1973. The result has been the in-migration of labour as discussed earlier in this chapter.

Population and Occupations

The occupations of a population are usually divided into three categories:

1. The Primary Occupations: This category includes those who work in agriculture, fishing, hunting and timber cutting.

2. The Secondary Occupations: including the industrial sector, mines, and those who work in all fields of production and the building industry.

3. The Tertiary Occupation: including all those working in the trade sectors, financial institutions, such as banks and insurance companies, and service workers such as those who work in restaurants, hotels, cafes and transportation. It also includes all those who work in the administrative institutions, physicians, lawyers and teachers. In addition to all these, retailers, property owners and those who are in the army are also listed under this category.

The only recent survey of occupations in Jeddah to produce a sectoral breakdown of the total workforce was carried out in 1978 and the results are shown in Table 3.16. It must be noted that the total number of the occupied population is smaller than that given in the 1974 census. There are several possible explanations for this ranging from the invalidity of either or both records to possible but unknown changes in classification. What is certain is that the working population increased rather than decreased during this period, as is indicated by the more detailed records of employment in particular fields - see Chapters 4 to 8. However, at this stage the only analysis possible is of the 1978 figures, the proportional importance of sectoral employment having to be regarded as at least orders of magnitude.

Table 3.16 : Occupations of Jeddah's Population 1978

Occupation	Number	%
Primary	1,564	1
Secondary	47,426	29
Tertiary	114,057	70
Total	163,047	100

Source : 1978 Socio-economic survey.

The primary sector is normally always relatively small in urban centres but the very small numbers and insignificant proportion so employed in Jeddah reinforces the point made in Chapter 1 that the resource-based opportunities for jobs in extractive industries are extremely limited. The secondary sector with 29 per cent of the work force includes all productive fields and, as will appear in Chapter 5, manufacturing plays a relatively small part in this compared with construction and employment in the productive public utilities such as electricity generation. Clearly dominant is the Tertiary sector, covering all public and private services. Such dominance is normal in large cities and much of the analysis made in the following chapters is concerned with changing balances between the Secondary and Tertiary groups as a whole and with trends and causative factors affecting individual sub-sectors

The 1978 Survey findings show how imbalanced is the distribution between the three main sections which are clearly related to the functional characteristics of economic activities in Jeddah.

Conclusion

Saudi Arabia as a whole is characterised by a lack of statistical data on population. However, we have seen from the available data that Jeddah has experienced a rapid growth of population between 1962-1978. According to this data, the population of Jeddah has increased more than five times in just one and a half decades. This high rate of increase, apart from the natural increase, is a result of the high rate of migration from both internal and international sources, which is mainly a result of high national revenue from oil especially after 1973. This has resulted in a known increase in the numbers of the working population, particularly in tertiary and secondary activities in spite of the statistical discrepancy noted above. It has also resulted in rising population densities, especially within the central business district and the inner zone. The newly developed, and still developing areas, especially the northern areas, which exhibit a high degree of planning and plenty of vacant land for development, possess a fairly low density and their population is well distributed throughout all the quarters. Therefore, if the population trends continue the same as the present, this will increase the pressure on, and demand for, all urban functions in the city. Without more accurate population data, not only will town-planning be difficult but also any control or guidance of the city's functional activities.

What evidence is available from population and demographic data suggests the following basic characteristics for Jeddah. The city appears as a vigorous centre of activity, always attractive to immigrants but particularly so since the early 1970's. An increasing proportion of these are non-Saudi and non-Arab. This influx has created some structural imbalances in the population as well as some social strains. Compared

with conditions before the 1940's, (see Chapter 2), the population is now less homogeneous in general and greater spatial variation of all types - density, housing, social and ethnic segregation - are appearing. Throughout it all, the dominant element in the life of Jeddah is its function of providing services. As examined in the Conclusion, Chapter 9, this service activity occurs on several scales, internal, regional, national and international. In the following chapters the characteristics of these and other functions are analysed separately.

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CHAPTER 3

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CHAPTER 4

COMMERCIAL AND FINANCIAL FUNCTIONS

Introduction

In this chapter two main functions, commercial and financial, of the city of Jeddah will be discussed in some detail. The joint treatment of both of these functions in this chapter is justified by the fact that they developed together side by side and are dependent upon each other.

The commercial and financial status of Jeddah, which is unique and unchallenged by other urban centres, both in the Western region and the whole Kingdom is undoubtedly one of the main reasons for continued acceleration in its expansion, and is a major feature characterising Jeddah and giving it the biggest share of national trade and financial activity.

The first part of this chapter discusses the commercial function, its growth and importance. For the purposes of this discussion the commercial structure is divided into two main sections i.e. wholesale trade and retail trade. The second part of this chapter is devoted to an exploration of the importance of financial activities in Jeddah. This part is divided into two sections; in the first a general overview of the financial life of the city of Jeddah, the second an examination of the different functions, structures and roles played by the two main financial institutions namely banks and money changers.

The Data

One of the main difficulties facing commercial studies is a lack of accurate information as far as any specific category of trade is concerned, especially as no separate, up-to-date records or accounts are officially available. Even the two consultant groups, Robert Matthew, Johnson

Marshall & Partners and Sert Jackson International/Saudconsult employed to plan the development in Jeddah were not able to quote in their Master plan for Jeddah any detailed statistical information regarding commercial activities in the city.

A field survey carried out by the writer is the major data source for this chapter. This survey was undertaken in order to fill in some of the gaps in the existing information. Furthermore, relevant secondary data already in existence has been used where appropriate. Some of these complementary sources have been published and are listed as follows:-

- (i) Summary results of Census of Establishments in the Kingdom 1396 A.H. - 1976 A.D. This was carried out by the Ministry of Finance & National Economy, Central Department of Statistics.⁽¹⁾
- (ii) The Population Census of 1962 and 1974, carried out by the Ministry of Finance & National Economy, Central Department of Statistics.⁽²⁾
- (iii) Summary Results of Census of Establishments in the Western Province of 1971, completed by the Ministry of Finance & National Economy, Central Department of Statistics.⁽³⁾
- (iv) Statistical Publication concerning workers, occupations, wages and working hours in the private establishments in the Western Region of the Kingdom during 1979-1980 carried out by the Ministry of Labour and Social Affairs.⁽⁴⁾
- (v) Summary Results, Census of Private Establishments, 1981, carried out by the Ministry of Finance and National Economy, Central Department of Statistics.⁽⁵⁾

Additional sources, such as unpublished statistical reports carried out by the Municipality of Jeddah, have been used. An attempt to make comparisons between published reports proved very difficult because they

differ in quality and purpose. For the purpose of this study, some alteration and combination of data proved to be necessary.

A. Commercial Function

Commercial growth and importance

There is no doubt that the commercial function is the main activity of the city of Jeddah. The creation and development of this vital function was necessitated by the absence of any important agricultural undertaking in the surrounding areas. It also resulted from the fact that the city, since its foundation, has acted as the commercial centre for Makkah and other cities and towns in the Hijaz region (see Chapter 2).

There are several indicators of the commercial importance of the city, the first is the fact that the city is the largest service centre in the Western region, serving not only the city itself and its region, but the whole country. The second is the high capital investment in the commercial sector. The third is a result of the growth of important regional as well as urban administrative functions and the fact that it is the most densely populated centre in the whole Province. Finally, the city has the largest number of people working in trade of any urban centre in Saudi Arabia. The total number of people engaged in trade activities, whether wholesale or retail was 21,259 in 1974, rising to 48,393 in 1981, an increase of 27,134 or 127.6 per cent. This substantial growth in just eight years is largely explained by the general rate of growth which occurred in Saudi Arabia after 1973, due to the oil price boom.

The following two tables (4.1 and 4.2) were designed to demonstrate the commercial pre-eminence of Jeddah over other large cities in Saudi Arabia. Table 4.1 shows the number of people engaged in trade activities in some large cities in the western region in 1974. In this matter, Jeddah has the largest number of people working in commercial activities

when compared for example with Makkah, the second largest city in the Western Region. The number of people involved in commercial activities in Jeddah was 61.8 per cent greater than the 13,321 found in Makkah. In Table 4.2 Jeddah is shown to have a higher number of people working in trade activities in 1981 even than Riyadh the capital, although the number of commercial establishments is almost the same in both cities.

Table 4.1 : Number of People Engaged in Trade Activities for Selected Cities in Western Region 1974

City	Type of trade activities		Total
	Wholesale	Retail	
Jeddah	1,697	19,562	21,259
Makkah	691	12,441	13,132
Taif	323	6,581	6,904

Source : Ministry of Finance, Central Department of Statistics.

Table 4.2 : Number of Commercial Establishments and Total Employment For Selected Cities 1981

City	Employment		Total	Establishments		Total
	Wholesale	Retail		Wholesale	Retail	
Riyadh	9,771	35,584	45,355	1,358	13,793	15,151
Jeddah	8,749	39,644	48,393	1,199	13,925	15,124
Makkah	1,232	13,317	14,549	234	7,534	7,768
Dammam	3,640	10,800	14,440	285	2,984	3,269
Taif	141	7,112	7,253	42	3,749	3,791

Source : Ministry of Finance, Central Department of Statistics.

Jeddah has very few locally made products to offer for trade, so that its commercial activities depend upon the handling of imported foreign goods. Four geographical areas supplied over 83 per cent of the city's imports in 1981 as can be seen from the following Table 4.3

Table 4.3

Four Geographical Origin of Cargo in Weight Tonnes 1981

	Bagged	Bulk	Other Const- ruction mat- erial	Food and foodstuff	Vehicles	Consumer Goods	Other Goods	Total
Mediterranean excluding Africa	24,635	3,152,096	1,581,924	1,105,529	54,272	296,025	257,992	6,472,473
North Europe	38,007	394,739	656,109	1,175,287	86,067	308,798	435,824	3,094,831
South East Asia	10,906	36,537	653,370	1,001,196	12,504	219,475	104,920	2,038,908
U.S.A and Canada	-	102,402	198,383	672,833	110,189	96,036	189,428	1,369,271
Total	73,546	3,685,774	3,089,786	3,954,845	263,032	893,334	988,164	12,975,483

Source : Kingdom of Saudi Arabia, Ports Authority Annual Statistics, 1981.

Table 4.4 : Import Tonnages at all 5 P.A. Ports 1977 - 1981

Commodity	1977	1978	1979	1980	1981
Foodstuffs	3,223,632	5,296,218	7,526,153	8,614,434	10,949,525
Building material	4,462,458	5,466,150	8,716,721	9,930,732	12,588,601
Equipment	906,954	3,127,069	2,275,696	2,133,921	2,292,995
Cement	7,432,301	8,123,033	9,289,244	10,681,916	10,473,030
Livestock (in number)	1,768,227	2,750,830	3,140,171	3,353,431	3,457,305
Vehicles (in number)	308,238	353,844	342,717	412,542	400,845

Source : Annual Statistics, Kingdom of Saudi Arabia Ports Authority, 1981.

In view of the limited economic resources of the city and region the trade balance is increasingly unfavourable and there is an enormous imbalance between import and export. For example in 1981 the total of imported cargo was 15,437,464 tonnes whilst exports were only 721,868 tonnes.⁽⁶⁾ Moreover, the value of exports has rapidly decreased. The main factor behind this was the influence of the oil boom which resulted in a large shift of population from the countryside, as well as immigration to the urban centres, and a rise in disposable income per capita. An increase followed in the demand for high value consumer goods including durables such as cars and electrical equipment, as well as for staple products, and all equipment for construction and industrial activities (see Table 4.4). Another important factor was the prevalent desire for making quick profits from trade rather than investing in industrial activities, even if such actions were detrimental to the national economy. On the other hand the recent policy of government investment in new major petrochemical industries such as those in Yanbu, north of Jeddah, may attract more private capital into manufacturing in the near future. Table 4.5 illustrates the increase in commercial establishments between 1962 and 1981 and the great and accelerating growth in both firms and workers.

Table 4.5 : Growth in Number of Commercial Establishments and Workers in Jeddah for 1962 - 71 - 81

Element	1962	1971	In-crease	% increase	1981	In-crease	% increase
Establishment	3,857	6,018	2,161	56	15,124	9,106	151
Workers	6,141	11,651	5,510	89.7	48,393	36,742	315
Average number of workers per establishment	1.6	2.0			3.2		

Source : Calculated from the records of the Ministry of Finance, Central Department of Statistics.

It is worth noting here that personal fieldwork carried out in 1982, would seem to support the published statistical information available. In particular the figures obtained from the author's personal surveys of numbers of retail establishments and workers were found to correspond closely to the 1981 figures i.e. 16,090 establishments employing 52,230 workers. Comparing the number of commercial firms in Jeddah to that in the Western Region shows that 44.5 per cent of the total number of commercial firms in the Western Region are in Jeddah (see Table 4.6).

Table 4.6 : The Number of Commercial Firms in Jeddah as a Percentage of those in the Western Province 1981

Elements	Number of Commercial Establishments		Total
	Wholesale	Retail	
(a) Jeddah	1,199	13,925	15,124
(b) Western Province	1,633	32,373	34,006
(c) Percentage (a) of (b)	73.4	43.0	44.5

Source : Ministry of Finance, Central Department of Statistics

A further preliminary point to emphasise the importance within Jeddah of essentially commercial activity as compared with industrial and financial is made by Table 4.7.

Table 4.7 : Jeddah : Commercial, Industrial and Financial Establishments 1981

Establishment	Number	%	Employees	%	Ave.No. of workers per Establishment
Commercial	15,124	79.3	48,393	55.0	3.2
Industrial	3,820	20.1	35,762	40.6	9.5
Financial Firms	117	0.6	3,868	4.4	33.0
Total	19,061	100	88,023	100	-

Source : Ministry of Finance, Central Department of Statistics

In order, however, to examine the characteristics of the commercial establishments the only published data available are in the CDS reports for 1971 since no later analyses have been produced. The fieldwork sample data presented later in this chapter go some way to make up this deficiency.

In 1971 almost all commercial establishments were small independent private businesses owned by local inhabitants, 92.5 per cent of all commercial and financial establishments were small miscellaneous retailers of foodstuffs, groceries, clothing, cloth, drinks, furniture, building material and motor spares. Headquarters establishments in Jeddah accounted for 7.9 per cent of the total, whilst branches of larger businesses centred in Riyadh, Dhahran and other national and international centres accounted for about 18.6 per cent of the total. (see Table 4.8).

Table 4.8 : Distribution of Commercial and Financial Establishments 1971

Establishment	Number	%	Independent Establishments	Headquarters Establishments	Branches of Establishments
Wholesale	425	7.0	199	109	117
Retail	5,593	92.5	4,231	366	996
Financial Firms	31	0.5	11	7	13
Total	6,049	100	4,441	482	1,126
Percentage	-	-	73.4	7.9	18.6

Source : Ministry of Finance, Central Department of Statistics

Table 4.9 : Employees in Commercial and Financial Establishments 1971

Establishment	Unpaid	Paid	Total
Wholesale	367	1,319	1,695
Retail	4,037	5,919	9,956
Financial firms	17	835	852
Total	4,421	8,073	12,503
Percentage	35.4	64.6	100.0

Source : Ministry of Finance, Central Department of Statistics

Two types of employees were classified as working in commercial establishments, wage earning and unpaid. In 1971 it was found that about 35.4 per cent of commercial workers in Jeddah were unpaid. (see Table 4.9). Almost all of these unpaid workers were actually the proprietors or members of their families and 64.6 per cent were paid employees. Almost all of these paid workers were foreign labourers.

Table 4.10 : Classification of Commercial Establishments by Number of Employees 1971

Establishments	1	2-4	5-9	10-19	20-49	50-99	+100	Total
Wholesale	106	238	60	11	7	2	1	425
Retail	3,812	1,639	92	26	13	9	2	5,593
Financial Firms	9	4	7	1	5	2	3	31
Total	3,927	1,881	159	38	25	13	6	6,049
Percentage	64.9	31.0	2.6	0.6	0.4	0.2	0.09	100

Source : Ministry of Finance, Central Department of Statistics

An examination of the classification of commercial establishments by number of employees shows that about 64.9 per cent had only one employee. The establishments employing between 2 and 4 people accounted for 31.0 per cent, those employing between 5 and 9 accounted for 2.6 per cent and firms with 10-19 employees had an 0.6 per cent share. The remainder had between 20 and 100 employees (see Table 4.10).

The recent growth of trade and commerce, is not only due to the continuous increase of the population but also to the increasing number of non-Saudi residents. This factor has brought new features to the retail trade in the city, notably the emergence of modern grocery shops and, in some cases, even big provincial stores and supermarkets with a large range of commodities demanded by expatriates.

Retail commercial centres exist throughout the city and it is possible to delimit a hierarchical order based on the quality of the commodities and services offered. The different levels of the hierarchy and their distribution are examined in detail below. More modern linear patterns of retail commercial distribution have developed along the main roads of the city, together with the well scattered isolated shops which will also be examined.

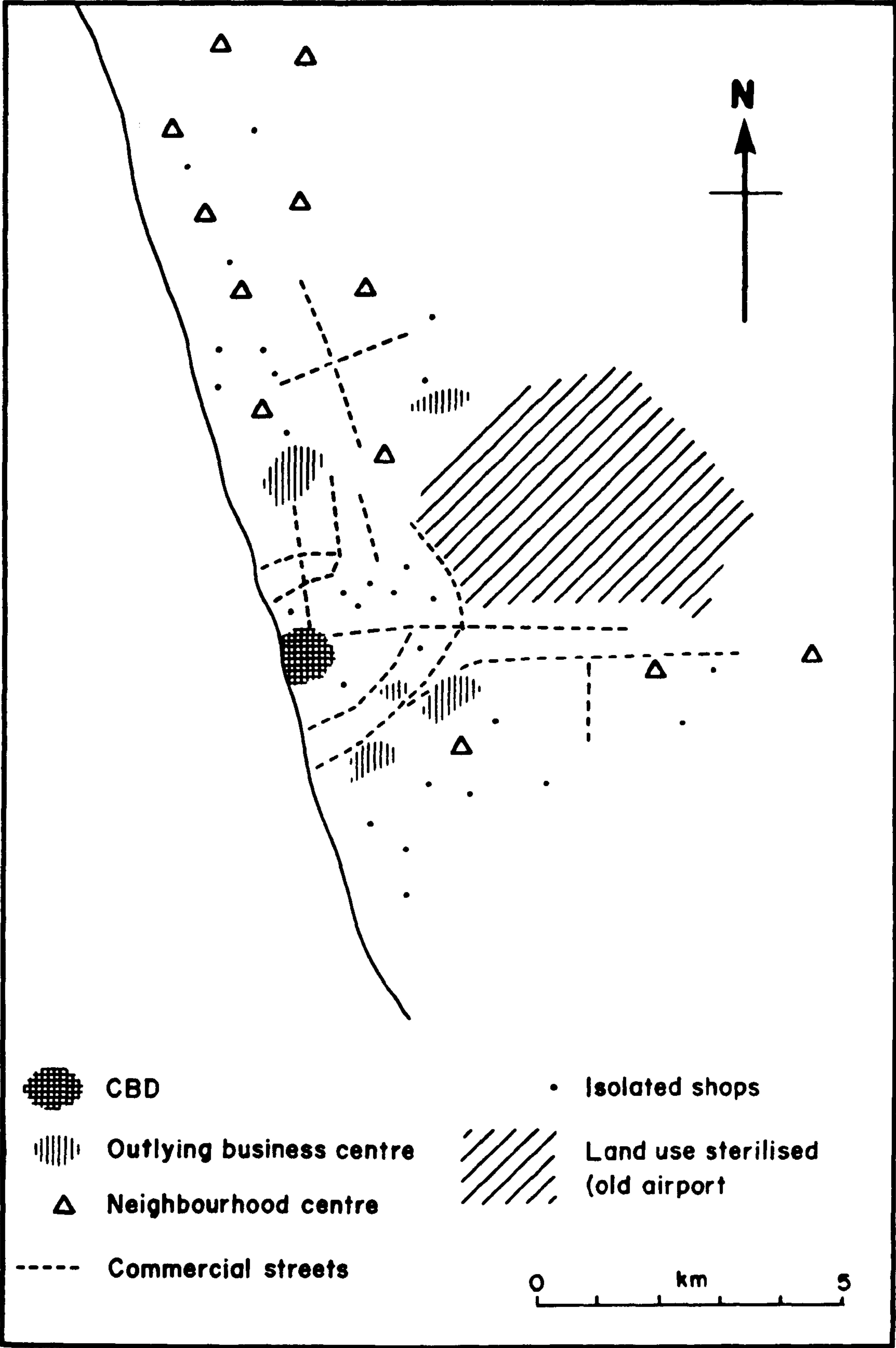
The nature and distribution of the wholesale activities and their relation to the retail structure of the city are also analysed below.

General Spatial Patterns

The spatial background to commercial activities in the city of Jeddah throughout its history can be summarised under the following scheme (see Figure 4.1).

As has been discussed earlier in Chapter 2, the city of Jeddah was originally founded to serve as a port for Makkah. This was the beginning of its commercial life, first as a commercial centre for Makkah and the Hijaz region and since then it has become the commercial centre for

Fig 4-1 General scheme of Commercial Structure of Jeddah



Saudi Arabia. The actual birth of the first commercial nucleus was near the old port where commercial premises were founded along the camel caravan route (Kabel and al-Alwe streets) to Makkah gate (Pl.4.1-4.2). As the city grew to cope with its growing commercial activity, some other small nuclei emerged, mainly around the mosques such as suq al-Jami in the north-east, the main commercial route. These, together with some other commercial feeder lines, formed the core of the CBD inside the walls until 1947. The former core served the whole built-up areas inside the walls and a small village for fishermen north of the CBD core.

By the 1950's, the commercial development which took place outside the Makkah gate, together with a small commercial development at Bab Sharif, formed the nucleus of the present CBD shortly after the demolition of the walls in 1947. At this stage, the CBD served the wider areas as the built-up area expanded, mainly to the north and south-east, and CBD became the goal for a multi purpose journey. By the early 60's, unplanned outlying commercial districts had been built in the new urban growth areas, as these areas had several advantages over the CBD, such as low land values and less traffic congestion. These outlying business centres offered a full range of retail goods and personal services. At this time, however, the main concentration of commercial activities was still in the central business district, which consequently dominated the commercial pattern. With the increasing competition from the outlying centres, the central business district retained its dominant role by concentrating on the provision of speciality goods which were unobtainable in the outlying centres.

During the same period, isolated shops and shops along the main road started to grow rapidly to cope with the growth of the built-up area (see Figure 4.1). In the 1970's, particularly after 1973, the city had experienced a huge rate of growth as a result of the oil boom and the



Plate 4.1: Kabel Street in the early 1940's where commercial premises were found along the camel caravan route leading to al-Alawe Street and to Bab Makkah.



Plate 4.2: Bab Makkah: the east end of the CBD.

huge increase of oil revenue. In this period several commercial developments took place, the CBD being enlarged and remaining the dominant commercial district of the city, but the older outlying commercial districts together with unplanned neighbourhood centres grew and at the same time increased in numbers (see Table 4.12). By the late 70's new planned neighbourhood and outlying business centres had been built to serve the more affluent suburban areas. The development of these centres first occurred in the northern part of the city and their east and south direction. The introduction of the automobile, together with the improvement in the road system further shaped the former commercial shape of the city of Jeddah.

Classification of Commercial Establishments

In this section major categories of commercial activity, namely wholesaling and retailing are studied in detail.

Wholesale Trade

Jeddah can be considered as a wholesale centre in the traditional sense, since not only does it supply retailers in the city but also does so to the surrounding smaller cities and towns in the Western Region and to some extent to other cities in the rest of the country. In this sense Jeddah's sea port is the main commercial port for the country and is responsible for wholesaling premises being found in larger numbers of a better quality than anywhere else in the Kingdom. This can be supported by the fact that according to the author's fieldwork, about 92 per cent of the wholesaling premises and sometimes also retailing premises of other Western Region cities, such as Makkah, Taif and Al-Medina import their goods directly from the wholesalers in Jeddah, and 45 per cent of the wholesale and retail premises of more distant parts of the country, such as Jizan, Najran and Abha, also import their goods through Jeddah. The wholesale stores, in general, deal with

Table 4.11 Growth in number of Wholesale Establishments in Jeddah

Elements	1962	1971	% incr- ease	1981	% incr- ease	Field work 1982	% incr- ease
Wholesale Establishments	77	425	452	1,199	182	1,285	7

Source : Ministry of Finance, Central Department of Statistics.
Fieldwork.

Table 4.12 Growth in number of workers of Commercial Establishments

Element	1962	1971	% incr- ease	1974	% incr- ease	1981	% incr- ease
Wholesale	185	1,695	816	1,697	0.1	8,749	415.5
Retail	5,956	9,956	67	19,562	96.5	39,644	102.6
Total	6,141	11,651	89.7	21,259	82.5	48,393	127.6

Source: Compiled from

Population Census 1962

Ministry of Finance, Central Department of Statistics

Population Census 1974.

foodstuff such as sugar, flour, rice, tea, canned food as well as textiles and clothing, home furnishings and building materials. It is thought that 90 per cent of all commodities found within the market are imported. (see Table 4.4). The total value of imports to Saudi Arabia rose from SR 51,596,095 in 1977 to SR 139,300,000 in 1982,⁽⁷⁾ and it is estimated that about two-thirds of the imported goods, whether foodstuff materials or other commodities, were sold in the Western Region. The sphere of influence of the wholesale trade thus covers generally the whole Western Region and the southern part of the country (see also Chapter 9 , Conclusion).

Whilst Jeddah has for very many years been important in this way (see Chapter 2) recent growth has been phenomenal. According to Table 4.11 there were 77 wholesale premises in Jeddah in 1962, this number jumping to 425 wholesale premises in 1971 (representing a 452 per cent increase over 1962). The number in 1981 increased further to 1,199 (an increase of 182 per cent over 1971) and 1,285 in 1982. ⁽⁸⁾(Table 4.11) The number of workers involved in wholesale trade has also grown steadily. There were 185 workers in 1962, rising to 1,697 in 1971, a ninefold increase in only nine years. Surprisingly there was no notable increase between 1971-1974, but the picture changes again between 1974-1981, showing a great increase as a result of the 1973 oil boom which resulted in pulling in of more immigrant workers (see Chapter 3 and Table 4.12).

Jeddah possesses most of the establishments and of workers found in the Western Region. For example, the number of wholesale premises in Jeddah in 1981 was 1,199 out of the 1,633 for the Western Region as a whole, i.e. 73.4 per cent. The numbers of wholesale workers in Jeddah 8,749 in 1981, compared to only 10,737 for the entire Western Region, shows not only that 81.5 per cent of wholesale workers in the Western Region were located in Jeddah, but also shows that the average size of

establishment was larger in Jeddah than elsewhere.(see Table 4.13)

Table 4.13 : Number of Workers in Commercial Establishments in Jeddah and Western Region 1981

Element	Jeddah	Western Region	Percentage
Wholesale	8,749	10,737	81.5
Retail	39,644	72,389	54.7
Total	48,393	83,126	58.2

Source : Ministry of Finance, Central Department of Statistics.

The financial capacity of the main wholesalers in Jeddah is such that they have an unrivalled ability for the mass purchase of commodities from various international sources throughout the world.

Table 4.14 : Turnover Sales for 225 Wholesale Merchants per year (S.R.)

Turnover sales per year S.R.	Percentage
500,000 - one million	4
1 million - 2 million	10
2 million - 5 million	25
5 million - 10 million	16
over 10 million	45
Total	100%

Source : Fieldwork 1982 .

From Table 4.14, summarising the characteristics of 225 wholesale establishments, one can see that about 45 per cent of the wholesale merchants had sales over 10 million riyals per year. The merchants with sales between 5 and 10 million riyals accounted for 16 per cent of total sales, those selling between 2 and 5 million riyals accounted for

25 per cent, the remainder had between 2 million and 500,000 riyals per year.

By law, all wholesale merchants are Saudi, but this is not true of their employees, of whom 80 per cent are non-Saudi; of these, 90 per cent are from Hadramaut (Southern Yemen) who traditionally have more experience in trade than other nationalities. The remaining 20 per cent Saudis are usually from the Western Region. (9)

From fieldwork it has been noted that the majority of wholesale merchants do not involve themselves in manufacture, or any kind of processing. Statistically, only 15 per cent of the wholesalers are involved in industrial activities while the rest do not engage in any type of manufacturing. This reflects in part a real difference in risk and rate of profit obtainable through different kinds of economic enterprise but also reflects different types of perception of opportunity as well as the financial capability of seizing the various opportunities. This subject will be examined further in the conclusion to this chapter, Chapter 5 on manufacturing, and the general conclusion.

There has been an increase in the variety of commodities marketed throughout the city especially vehicles, luxury goods and fruit and vegetables (see Table 4.4) for several reasons. First, the increase in living standards, as well as the growth of foreign communities. Secondly, import tariffs are very low compared to other countries in the Middle East; this explains why most foreign labourers buy some commodities, such as vehicles, radio, television sets and other electrical goods, for export to their own countries. Finally, the use of more advanced equipment in Jeddah's port has helped the import of large quantities of commodities and the rapid discharge quickly into the market.

Wholesale Structure

Wholesaling has been defined as the selling of goods to retailers as opposed to sales to the consumer, although since many wholesalers have

large storage warehouses, as a result warehousing is sometimes classified along with wholesaling. Here, the writer considers storage and warehousing as a part of wholesaling only to the extent that they actually are part of a marketing operation.

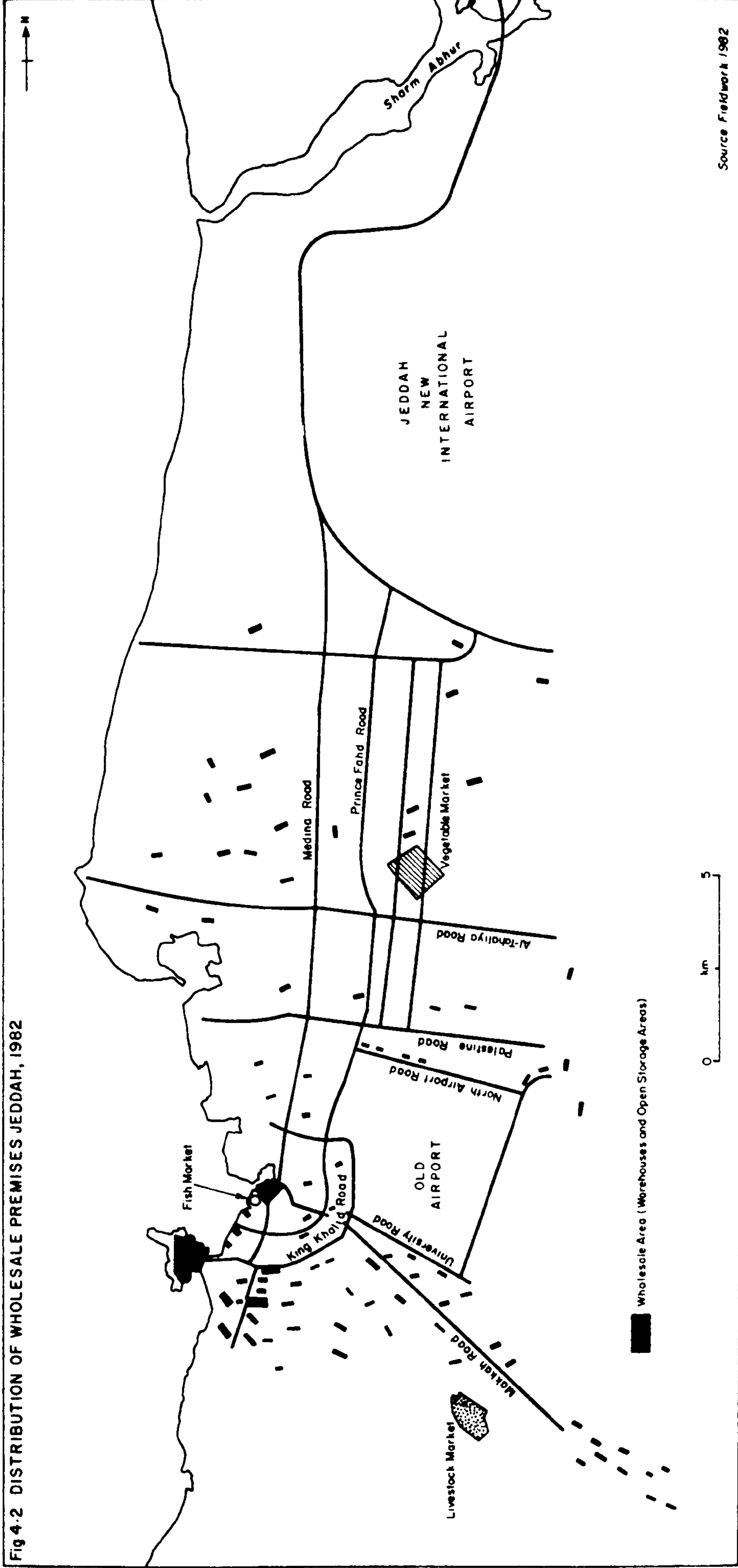
It is very difficult, in practice, to draw a distinction between what is wholesaling and what is not. Though some establishments sell wholesale only, others may sell wholesale and retail, and the proportions between the two for any one establishment are difficult to determine. Another factor which makes the distinction difficult is that in some cases wholesalers may occupy premises similar in size to those occupied by their neighbouring retailers as in Bab Sharif. Wholesale activity is scattered throughout the city's urbanized area, but strong concentrations occur in the centre of the city, to the south and north of the centre (see Figure 4.2).

One of the most famous studies concerning the structure of wholesaling is that of Richard Reseska, which investigated the patterns of wholesale establishments in Columbus, Ohio.⁽¹⁰⁾ In this study, six types of wholesale structure were differentiated. Of these categories only two types can be applied to the city of Jeddah, the others being not so well developed in Jeddah yet. The following analysis is based on fieldwork carried out by the author in 1982.

1. The Central Wholesale Complex⁽¹¹⁾

There are four major clusters of wholesale stores located in the central area. The first lies in al-Khaskeya street, south of Kabel street. The wholesaling here consists mainly of the distribution of foodstuffs and ready made clothes. The foodstuffs' wholesale stores are very small, with the average floor space of the display store being only 3 square metres, 90 per cent of these wholesale premises being run by the owner and one additional sales assistant. Some of the small

Fig 4-2 DISTRIBUTION OF WHOLESALE PREMISES JEDDAH, 1982



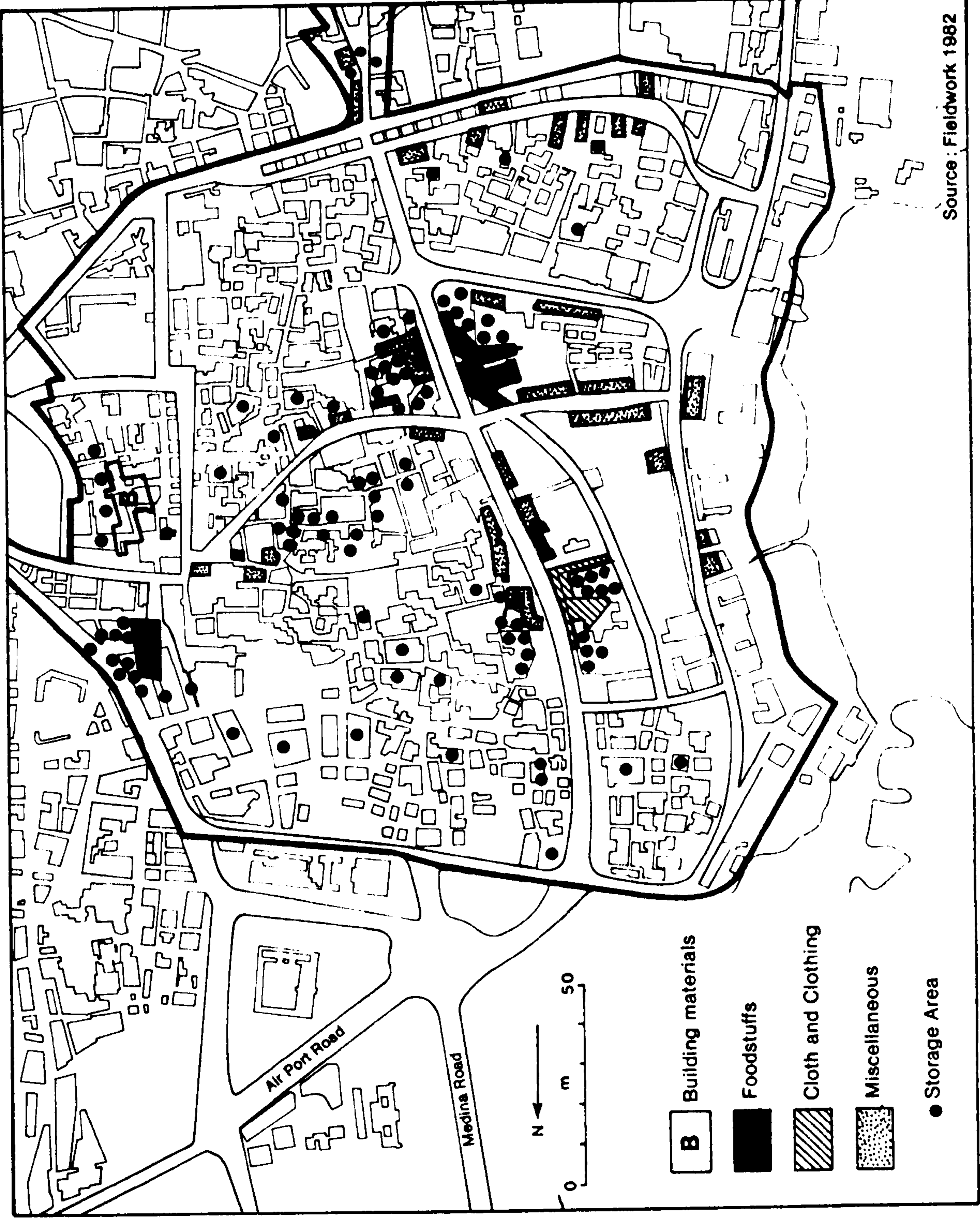
wholesalers in this location have their warehouse stores near to their shops, whilst large wholesalers generally have their warehouses near the port. This area contains about 40 foodstuff stores and 47 stores dealing mainly in ready-made clothes, suitcases, toys, and textiles. Building materials used in these stores show that about 90 per cent were constructed of al-Mangabi stone and the rest concrete. This would seem to suggest that this wholesale market is one of the oldest markets in the city. (see Fig.4.3)

The second wholesale cluster is located in al-Sanee'a street (between al-Nada and King Faisal Street) which consist of three parallel alleys with 80 premises. Textiles represent 97 per cent of the value of commodities sold in this market. The typical floor space of these shops is about 10 sq. metres. Each shop displays samples of the textiles they have in storage for the customers to choose. Most of the wholesalers have a warehouse within walking distance from their stores. Some of them store their commodities in otherwise unusable old buildings which are not infrequently destroyed by fire, because of inadequate preparation for the storage of materials. The Municipality is faced with considerable risk of fires spreading in these congested areas. (Fig.4.3)

The third wholesale cluster found in the CBD is located in Bab Makkah on the eastern side of the CBD. This really consists of two small clusters, the first located in the northern part of Bab Makkah where the foodstuffs wholesale business is found. Here there are 42 wholesale stores sited close to each other. These foodstuff wholesalers supply smaller retailers than those operating in Al-Khaskeya, dealing mainly with retailers in Bab Makkah and some other retailers in the city. They are usually modernized shops with more floor space than in Al-Khaskeya. Here the average floor space is about 16 sq. metres. The main commodity type is canned food rather than grain or other foodstuffs. The warehouses are located very close to the wholesale premises, and

DISTRIBUTION OF WHOLESALE PREMISES AND STORAGE AREAS IN CBD JEDDAH, 1982

Fig. 4.3



Source: Fieldwork 1982

were originally small stores converted to warehouses to be close to the wholesalers. There are about 22 warehouses of this type in this location. The second wholesale sub-cluster specialises in building materials and is located in the southern part of Bab Makkah. The 41 stores here deal mainly with cement, gypsum and wood. There are about 21 cement wholesalers and 20 wood wholesalers. Most of these wholesalers have their warehouses in the back of their stores. (Fig.4.3).

In addition to the previous clusters in the CBD, there is a mixture of wholesale premises located in Bab Sharceef, the southern part of the CBD. The wholesalers of this part are involved mainly with ready-made clothes, textiles and household goods. The average floor space of these stores is about 18 sq. metres; the average number of employees involved in each activity is 3. (Fig.4.3)

Besides the above mentioned wholesale stores, wholesale business in the CBD is often conducted through offices where a large wholesaler may deal with a variety of commodities (General trade offices) (see Figure 4.3). Most of the wholesale trade in kitchen utensils is located in offices sited in multi-storey buildings. Businesses dealing with other commodities such as foodstuffs, perfume and machinery are also conducted from these offices. At this level the wholesalers are usually the importers.

In an examination of such CBD locations of the wholesale merchants it was found that some standard factors were said to determine the choice of this location, namely : the presence of retail potential in these districts of the city; rents in this part of the city tend to be lower; finally the proximity to Jeddah port, to which easy access is of considerable importance.

2. Outlying Warehouse Complexes (12)

Warehouses are scattered throughout the city with some concentration in the following areas; first, the central area, characterized by a concentration of covered warehouses, either small or large. The small ones are located within and around the CBD core, while the large ones are located at the edges of the CBD core. The warehouses deal mainly with foodstuffs, kitchen utensils and textiles and are easily accessible to the wholesalers of the CBD. The second area is located south of the CBD with some concentration in al-Mena road, Makkah road, the vicinity of the port and south of the Petromin complex. This area consists of warehouses and open storage areas. The existence of this phenomenon followed the 1973 boom in development, especially in the construction industry. Here vacant sites throughout the city are used to store a wide variety of commodities mainly construction materials such as steel, timber, cement, tiles and pre-cast units. These materials are stored in large quantities throughout the city, often within residential areas. Vehicles and other construction equipment and containers are also stored on many vacant sites. Most of these store areas are temporary while adjacent areas are developed. Once no longer used they are cleared and divided as residential developments. Until they are so developed, they continue to present problems; noise, unsightliness and the problem of large trucks penetrating the residential areas are factors which generally tend to create an unsatisfactory living environment. Warehouses in this location are mainly used for foodstuff and medical materials (see Figure 4.2). The choice of specific locations in the previous area was a result of the proximity of these warehouses to the port, and to locations where main road junctions give exceptionally good access to trucking terminals.

The area north of the CBD is also characterized by both warehouses and open storage areas, with some concentration along the western part of

al-Medina road (see Figure 4.2). Both are mainly involved in the distribution of building materials. The concentration of these open storage areas and warehouses for building materials in this location can be related to the existence of several building material factories in the surrounding areas such as the cement factory, cement pipe factory "imantiet" and several ready-mix cement plants. The total number of warehouses and open storage areas according to location can be seen in Table 4.15.

In addition to warehouses and open storage areas, a new type of storage has been introduced into Jeddah in the last few years in the form of cold stores where frozen foods are kept. The demand for this type of food has risen as a result of the population increase and particularly the growth in foreign communities. There are now 62 cold stores scattered throughout the areas already noted. (see Table 4.15).

Table 4.15* : Number and Location of Outlying Warehouse Complexes in Jeddah 1982

Location	No. of Warehouses	No. of open storage areas	No. of cold stores
CBD	95	-	2
South of the CBD	409	120	29
North of the CBD	120	135	31
Total	624	255	62

* Note : The number of warehouses includes small and large warehouses.

Source : Municipality of Jeddah, unpublished report and fieldwork, 1982.

In addition to these elements in the structure of wholesale trade, one other type has been distinguished by the writer, this comprises the three Municipal markets for vegetables, livestock and fish respectively.

The vegetable market lies to the north east of the CBD (see Figure 4.2) and it occupies an area of about 18,000 sq. m. The wholesale function of the market is restricted to vegetables and fruit. Agricultural products come to the market mainly from abroad, a small proportion coming locally from agricultural areas such as Taif, where local and imported commodities are sold by auctioneer, Dallal, in bulk to the market merchants. The market draws its retailing customers from the whole city. The commercial activities of the market take place daily in the early morning, but are more intense on Thursday and Friday. (Plate 4.3)

The second market, for sheep and livestock, is situated in the south east of the CBD near the new Sports Stadium occupying an area of about 175,000 sq.m. (see Figure 4.2). The wholesaling of the market is concerned with live animals, mainly sheep, but with some goats and camels. Animals are displayed for sale every day. Here butchers and other customers can purchase live animals either for slaughtering or stocking (Plate 4.4). This site is adequate for the purpose, but if this market were to be divided into two locations it would be more convenient for customers, since Jeddah has expanded very rapidly since the market's inception. One site in the south and one in the north would seem to be better. The market lacks regulation and inspections are infrequent and inadequate. Some illegal action takes place in the market such as the killing and slaughtering of animals.

Wholesale Fish Market

Jeddah is the principal wholesale fish market on the Red Sea coast and also acts as the main fish supplier to Makkah, Taif and Medina, although the wholesale market represents only a small part of the total fish market. It is located approximately 1.5 km from the core of the CBD. Fish is drawn into the market from several areas as well as Jeddah, e.g. Yanbu, al-Qunfidah and Ummlajj, all along the Red Sea coast. It is estimated that the amount of fish received is



Plate 4.3: The vegetable market north of Jeddah.



Plate 4.4: The livestock market.



Plate 4.5: The fish market.

9 tonnes per day. Fish is sold by auction, Haraj, to wholesale merchants and then to the retailer. Some of the wholesalers and the retailers keep the fish in ice-boxes overnight or longer until there is demand for fish. A study carried out by the Fisheries Development Project,⁽¹³⁾ shows that the total landings for fish along the Red Sea coast are estimated to be 10,000 tonnes per annum, the bulk of which is caught in the southern region between al-Qunfidah to Gizan. Of the volume of fish entering the wholesale market, 46 per cent is delivered by $\frac{1}{2}$ tonne pick-up vehicles, 18 per cent by 10 tonne vehicles and the remaining 36 per cent by boat. The same study estimated 54 per cent of road deliveries from Jeddah district area with 7 per cent arriving from the northern landing areas of Yanbu and Ummlajj, and 39 per cent come from the south, mainly the Quishran area. From each of the fish landing points an average of two consignments a week are trucked to Jeddah.(Plate 4.5).

Retailing Trade

A retail establishment has been defined as a commercial unit in which the chain of production and distribution comes to an end and the process of consumption begins.⁽¹⁴⁾ Indeed it is the place where goods are usually purchased by the ultimate consumer. One of the characteristics of the retail structure of the city is the very large number of retail establishments in relation to the population. In 1962 there were 3,629 retailing units in Jeddah, this number rising to 5,593 in 1971 (representing a 54 per cent increase since 1962) (see Table 4.16). In 1981 the number of retail premises was 13,925, representing a further 149 per cent increase since 1971 (see Table 4.2).

The number of workers has also risen, particularly in the last few years. For example, the number of workers in retailing in 1962 was 5,956, in 1971 9,956, a 69 per cent increase over 1962. The number

Table 4.16 : Growth in Number of Retail Establishments and Average Population served per Retail Premises

Year	Population	No. of retail establishments	Average Population per retail unit
1962	147,900	3,629	41
1971*	381,000	5,593	68

Source: Compiled from Ministry of Finance, Central Department of Statistics

* R.M.J.M.P. Population estimate.

of workers in 1974, 19,562 represents an increase of 96.5 per cent over 1971. Much of this large increase occurred after 1973 which seems to indicate that most of the commercial and economic development evident today was a result of the 1973 oil price boom and rapid population increase. This situation appears to be continuing; for example, the number of workers in 1981 reached 39,644, a 102.6 per cent increase over 1974 (see Table 4.12). Sales turnover per year is high, attracting many people into the retail business, including foreigners - the latter legally and illegally. Table 4.17 illustrates the range of turnover sales in retail businesses, data drawn from a fieldwork sample of 360 establishments.

Table 4.17 : Turnover Sales in Retailing per year (S.R) 1982
(360 Establishments)

Turnover sales per year (SR)	Frequency	Percentage
10,000 - 20,000	8	2.2
20,000 - 50,000	10	5.5
50,000 - 100,000	36	10.0
100,000 - 500,000	106	29.5
500,000 - One million	60	16.7
Over one million	130	36.1
Total	360	100

Source : Fieldwork 1982.

From the previous table one can see that about 36 per cent of the retail merchants had over one million riyals sales per year. Merchants having sales of between 500,000 and 1 million riyals accounted for 16.6 per cent, those who had 100,000 - 500,000 accounted for 29.4 per cent, those selling between 50,000 and 100,000 accounted for 10 per cent and the remainder had between 50,000 and 10,000 riyals per year.

An outstanding factor in the pattern of retail distribution in Jeddah is the numerical dominance of establishments selling foodstuffs, ready made clothes and eating places. An additional common feature of Jeddah, as in other Saudi cities, is the presence of a large number of cart and pavement sellers. Whilst this form of retailing is an important source of employment for immigrants to the city, they compete with the legal sellers since they offer the same commodities, especially fruit, at lower prices. They also create a serious obstacle to traffic flow, especially on Al-Mena road, Airport road and Medina road, and create pedestrian congestion, especially in the old town district (see Plates 4.6, 4.7). Another characteristic of Jeddah's retailing, and an important reason for the huge number of retail establishments, is the fact that many shops are one-man operated. The questionnaire indicates that 27.7 per cent of these shops are managed by the owner, 41.1 per cent employ one assistant in addition to the owner, shops employing two assistants in addition to the owner accounting for 16.6 per cent and only 5.5 per cent are operated by three employees plus the owner. In the last few years a new method of retailing has been introduced to Jeddah and other Saudi cities, department stores and large supermarkets. The number of employees here is generally over 10 workers and the owner is rarely personally involved. During the period in which fieldwork was carried out, it was noted that several retail units of this kind exist today employing over 100 people. Most of these department stores and supermarkets are located in the uppermost part of the city.



Plate 4.6: Pavement seller in the CBD Masawek.



Plate 4.7: Luban pavement sellers in the CBD. These and other pavement sellers cause congestions in the CBD and other market areas.

(see Figure 4.4), and Table 4.18 shows the distribution of the number of salesmen in each shop.

Table 4.18 : Number of Salesmen in Each Shop (1982)
(360 Establishments)

Number of Salesmen			Frequency	Per cent
Owner only			100	27.8
Additional sales assistant : 1			148	41.1
"	"	2	60	16.7
"	"	3	18	5.0
"	"	4	10	2.8
"	"	5	4	1.1
"	"	6	-	-
"	"	7	-	-
"	"	8	-	-
"	"	9	-	-
"	"	10	8	2.2
	Over	10	12	3.3
Total			360	100

Source : Fieldwork sample survey 1982.

By law, ownership of shops is restricted to Saudi citizens, but there are cases where non-Saudi persons have purchased the use of the name of a Saudi citizen. This situation is most common in small shops which deal mainly with everyday requirements. Non-Saudi immigrants, with a small sum of money can, with some help from a Saudi citizen, establish small stores on one of the subsidiary roads. In all, several thousand retail outlets are probably of this type. The number of Saudi employees is very small if compared to non-Saudi. The questionnaire data indicates that 85 per cent of employees are non-Saudi and 15 per cent are Saudi; of the Saudi employees 90 per cent are from the Western and Southern Regions of the Kingdom.

According to the Census of Private Establishments of 1981, Jeddah had the largest number of both retail establishments and workers in Saudi Arabia. For example, the number of workers and establishments in Jeddah in 1981 were 39,644 and 13,925 respectively, compared to 35,584 of retail workers and 13,793 establishments in Riyadh (see Table 4.2) Comparing Jeddah with the Western Region shows that 43 per cent of the retail establishments in the Western Region are located in Jeddah (see Table 4.6).

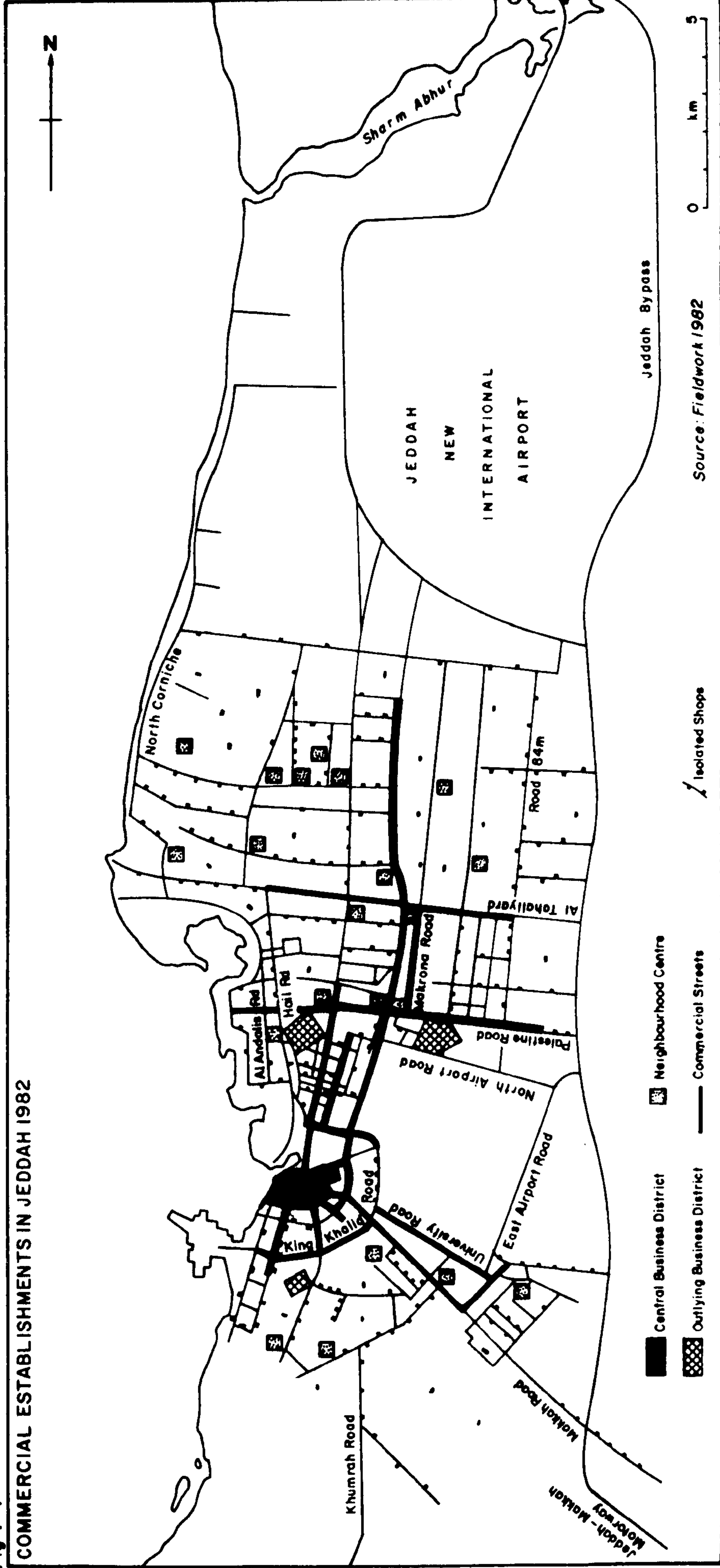
The Hierarchy of Retail Centres and their Distribution (see Fig.4.4)

Having examined the growth, distribution and general characteristics of wholesaling and retailing establishments, it is now possible to assess whether there exists a hierarchy of commercial centres within the city. A study of the distribution of retail commercial enterprises in Jeddah showed that there are clustered nucleations of varying size and composition and also that they are distributed in linear patterns along the main lines of communication. An attempt was made to discover whether the nucleations of retail commercial activity reflected any hierarchical order, in terms of the range of services and commodities available. But before any attempt to delimit a hierarchical structure is made, it must be stressed that in Jeddah, as in other cities in developing countries, there appears to be a mixture of ancient, traditional element and of modern elements of a "Western" pattern. Western acculturation is taking place in some respects, whilst a 're-orientalising' process is taking place in others. (15)

It is also the case that in the different parts of the city, or even within the same parts of the city, similar retail functions may have different forms. This may be reflected in the quality of the material sold, the appearance of the shops, the size of the shops and even the structure of the shopping area itself. Housing schemes of

Fig 4 . 4

COMMERCIAL ESTABLISHMENTS IN JEDDAH 1982



different quality, reflecting different life styles, have also influenced the type of retail activities in each area. The following classification was devised when the field data were examined, not primarily for morphological study but to indicate through facts of location the type and characteristics of functional activity in the city.

1. Central Business District (CBD)
2. The Outlying Business Centre
3. The Neighbourhood Business Centre
4. The Principal Business Streets
5. Isolated Shops

1. Central Business District (CBD)

The Central Business District has been defined as the area of activity where the retailing of goods and services and the performance of various office activities for private profit are completely dominant. These activities are increasingly found in other parts of cities, but not at the same level of intensity and not occupying the large compact area found at the centre.⁽¹⁶⁾ According to this definition, the CBD of Jeddah, from a business and commercial point of view is the most important part of the city, for it includes a major proportion of the retail and wholesale shops. It is also a fairly compact area and services as the centre for finance, banking and insurance. Consequently, it is also the area of most intense service employment. Here, the concentration of the main banks and business offices marks it out as an area of considerable functional significance, exerting a functional pull over the entire city.

The CBD is characterised by accessibility, since this section of the city can be easily reached from the rest of the built-up area. It is also the part most generally accessible to those people who live within the city's sphere of influence. The five main city radial

roads; Makkah Road, Al Cornich, Medina Road, Airport Road, Bab Sharif and Al Mena Road, all converge on the CBD from the periphery (Figure 4.6). Here also the roads converge carrying arterial traffic to and from other cities such as Makkah, Medina, Yanbu etc.

Apart from its general functional importance, the CBD of Jeddah is still the largest retail centre in the city. It contains about 25 per cent of all retail trade shops in the city. This percentage was even higher in the past; in 1967 and 1971, for example, the figures reached 68 per cent and 44 per cent respectively. This decrease in proportional numerical importance reflects the expansion in other zones of retail development which took place mainly after 1973. On the other hand, associated with the traditional importance of the souk in Middle Eastern society, it is clear that this shopping component will remain important.

The CBD, apart from satisfying high order functions, also serves the dense population of the low income housing areas around the CBD (see Chapter 3). Except for the better quality products food prices are generally lower in this area.

It is obvious that an important retail component of the speciality shops which provide a range of high-value goods should be located in the CBD. These shops, because of the nature and cost of the goods sold, depend on an extremely wide catchment area. Such shops are found principally in King Abdulaziz Street, which cuts through the CBD in a northerly direction to and from the core of the CBD, where a number of speciality shops (mainly watches and gold jewellery) are located within the souk itself.

Location

Since the demolition of the walls in 1947, the CBD of Jeddah expanded to contain two new commercial developments; Bab Makkah to the

east and Bab Sharif to the south. Bab Makkah was mainly created to supply grain, flour and other specific foodstuffs for bedouins coming from the surrounding area, and this is why the Western extension of Bab Makkah is known as "Souq Al badoo" (Bedouin market). The core of the CBD during the Turkish period, and today still maintaining the same importance, is the area around Kabel street, Al Khaskeya, Al Suq al Kabeer, Suq al Nada, al Alawe street and Suq Al Jami (see Figure 4.6).

The growth of the CBD in this location happened naturally at the nodal point where activity of the old port, located south of Kabel street, met the camel caravan which used Kabel street and al-alawe street as the main route leading to Makkah. Shops and other services were located along this route and in the surrounding area (see Figure 4.5).

Criteria of Delimitation

There are a number of indices which govern the delimitation of a CBD. In their studies on delimiting the CBD Murphy and Vance have considered criteria such as pedestrian density, traffic flow, land value and type of land used.⁽¹⁷⁾

Not all of these criteria can be examined here, but that analysis which is possible follows. In dealing with pedestrian density, it should be noted that there are four important traffic nodes of in-flow into the CBD which has the highest pedestrian traffic in the city. (Figure 4.6). Vehicle traffic is only allowed in the two principal cross routes running north-south, King Abdulaziz street and King Faisal street (Althahab street). In other parts of the CBD, vehicle traffic is forbidden because of the narrowness of the streets. This in itself creates the highest pedestrian densities in Jeddah, as well as the most intense retail activity.

Al-Cornich parking area, west of the CBD, which has a capacity of about 2,000 vehicles, together with bus stops and taxis, is the destin-

ation for passengers coming from all the northern and north east parts of the city and the starting point of most pedestrians moving to the CBD. They crowd some streets, moving through to the core of the CBD crossing King Abdulaziz street.

This point is considered to be the major node for pedestrian movement to the CBD. It absorbs the majority of customers and clientele from the coastal quarters, as well as from some northern quarters.

The second centre of pedestrian movement lies on the east side of the CBD where some of the vacant land around Bab Makkah is used as a parking lot. After crossing Bab Makkah the pedestrians reach the heart of the CBD by passing along Shari al-alaw . This centre absorbs the majority of customers and clientele from the eastern part of the city, as well as from Makkah and Bahra village between Makkah and Jeddah.

The third pedestrian centre is located in the south side of the CBD somewhat south of King Faisal street where there exists some private and municipality parking. The pedestrians here come from the southern part of the city as well as from the south east. The pedestrians follow different routes on their way to the core of the CBD.

The fourth pedestrian centre is located in the vicinity of the lagoon, Al-Bayaa square and around Al-Gashila. The pedestrians come from the north-east of the city, as well as from the northern part, where there are some parking facilities around the area. The walker reaches the heart of the CBD by passing along King Abdulaziz street, King Faisal streets and through some narrow streets.

In addition to the above four traffic nodes, the CBD is itself a dense residential area together with adjacent residential areas, which add a considerable volume to the density of pedestrians. This pedestrian concentration gives excellent evidence as to the delimitation of the CBD.

Vehicular traffic is another consideration for the delimitation of the CBD. The five main city radial roads mentioned earlier in this chapter spill their vehicles into congested parking yards (Figure 4.6). The CBD parking facilities are the largest car parks throughout the city, and constitute the most congested car parks in the city. Some of the parking areas function as terminal areas for nearly all public hire and private passenger cars, as well as parking areas for private cars, especially during the late afternoon periods. Building height is another factor which can be examined in an attempt to delimit the CBD. This criteria is not easy to apply because of the rapid building and rebuilding in progress but stands out as containing the highest buildings in the city. The height of buildings range from 2 storeys to over 20.

At the present time, a skyscraper is under construction which will ultimately provide over 30 storeys for the National Bank. The appearance of such skyscrapers in the CBD is an attempt to squeeze maximum use out of a limited resource, that is central city land. (18) Building heights decline towards the edge of the city.

Land values have been considered as a significant indicator of delimiting the CBD. H. Carter in his study of the CBD indicated that there are many difficulties that arise in the attempt to employ this apparently ideal basis. He used Britain as an example, since in most parts of the world, the simple and outstanding fact is that reliable data are just not available. (19)

Jeddah is an extreme case where data is not available. Personal observation, together with fieldwork is the main source of data. In a city centre there is an area in which land values reach their highest level. In Jeddah, King Abdulaziz street which leads to the other streets of the CBD corresponds with the peak land value of the city. The frontal land values on King Abdulaziz street, with respect to location, vary from 32,000 to 35,000 riyals per sq.m.

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There is a general correlation between the reduction in land values and the distance from the commercial core, although declining most sharply in a southerly direction. At the same time there is a relationship between the frontal land values and the width of the thoroughfares. For instance, the land values on both sides of Kabel street are lower than those on King Abdulaziz street. This can be attributed to the considerable advantages which arise from the width of the King Abdulaziz street which carries the main traffic flow to the CBD, as well as the nearness to parking space for the shopper in the city. As shown in Figure 4.3 the city centre extends further in an easterly direction than a southerly direction owing to the presence of Bab Makkah. At the same time land values to the east are higher than to the south.

The daily takings of shops inasmuch as they are correlated with land and rental values can be useful in delimiting the boundary of the CBD of Jeddah. As a general rule the high level of the peak land value intersection (P.L.V.I) is an important factor in the selection of those businesses which can afford the high land value. In other words, the shops which have high profits and turnover per unit area have the ability to choose the best location in the CBD or close to it. Since there is no legal requirement to present accounts for e.g. tax purposes, we have to rely on sample data and general interview information. In summary we can state that the most profitable shops are located along King Abdulaziz street where jewellers, large appliances stores and watchmakers are located.

Rent value is another criterion by which the CBD of Jeddah can be defined and delimited. Generally there is usually a positive relationship between land value and rent value in which land value is a rent capitalized function. Rent value criteria depend upon the movement of the market economy and the agreement between the owner of the premises and the person

renting it. In addition, several other factors have to be borne in mind in discussing this criteria such as width of the street, space, access and site advantage and finally shop condition. There is a relationship between shop condition and rent value in that the older and smaller shops in the commercial core are gradually losing their competitiveness with the growing of larger and better equipped shops. For instance shop rents in al Khaskeya are much lower compared with King Abdulaziz shops. Also there is a correlation between site and monthly rents in different parts of the CBD which shows a very high correlation between the southerly side of al alawe street and the southerly side of Kabel street. Furthermore, the level of rent is affected by the time of the rent agreements. For example, it has been found during fieldwork that 85 per cent of the CBD premises are rented under longstanding old agreement which means low present rent values. Some recent agreements in newly developed buildings in the CBD shows a substantial difference. For instance, one shop with a long-standing agreement pays 16,000 riyals yearly rent. The same size shop in new development buildings such as Al Faysaleya shopping centre costs 100,000 riyals yearly to rent. Such differentiation obscures the fact that rental values in the CBD, wherever new agreements can be entered into, are considerably higher than in the surrounding zones. This change can be attributed to the enormous increase of population both local and foreign, and the very great increase in the price of oil during 1973-74 which had a great impact on all economic phases but particularly on construction.

By late 1982, a new Real Estate Law concerning rent regulation "Free Real Estate" came into operation and this will enable owners to raise old agreement rents to equal rents in new developments.

The other index which aids the delimitation of the CBD is that of break in continuity of the land used for commercial purposes. On

the south, the CBD is bordered by an area of mixed land use, consisting of light industry, carpenters, metal welders, timber and building materials wholesalers, open storage areas and the port of Jeddah. On the east the CBD is surrounded by compact residential areas of high density population which extend to the boundary with the Emirate of Makkah district. The northern boundary of the CBD is experiencing a change in land use since the growth explosion took place on this side. Immediately north of the CBD several large sized, six to ten storey buildings are being constructed for multiple functions - the ground floor designed for several activities such as restaurant and shops typically selling shoes, books and women's and men's clothes, the second floor consisting of private offices, private medical clinics, the upper floors are intended for residential purposes. The north east boundary of Jeddah's CBD is also a zone of mixed land use consisting of some large hotels, wider streets, Saudi Air lines and some office buildings.

If we consider the pattern of employment as an index in delimiting the CBD it can be clearly seen that in this centre there is a concentration of certain types of employment, not only shopkeepers and shop assistants, but also specialists such as physicians, architects, engineers, estate brokers, lawyers and employees in banks, hotels, restaurant, eating places and general trade offices. Other types of employees such as government employees represent a smaller percentage if compared with the above employees.

Retail Trade in the Central Business District⁽²⁰⁾ (see Fig. 4.5 A,B)

This delimitation is based on the extensive study conducted by the writer on the central business district, in which all commercial premises and their various uses were surveyed. As can be seen from Table 4.19 the CBD contains some of the retail activities which usually characterise a village or small town, lower-order, retail structures. For example,

Table 4.19 : Types of Retail Establishment in the CBD

Kind of shop	King Abdulaziz Street	Kabel Street	Al Khask-eya & west to K. Abdu laziz St.	Suq Al Nada	King Faisal St.	Bet. al Nada & K. Faisal	Bet.al-Nada & K. Abdulaziz	Shari al-alawe	Suq Al Bado	Suq Al Jami	Bab Makkah	Bab Sharif	Total
Clothing, cloth, footwear and related items	53	20	84	47	3	121	144	72	82	14	36	75	751
Electric goods, household & TV, radio and related items	38	12	66	10	7	12	13	11	1	-	22	25	217
Cooking utensils, table-wear and glass	7	13	6	-	-	-	-	25	-	-	10	21	82
Rugs, mats and related items	29	-	11	3	1	14	4	13	-	-	5	15	95
Photography, camera and opticians	18	3	3	3	1	4	16	1	-	-	10	8	67
Watches, clock and gifts	10	15	27	17	-	25	34	4	-	2	4	20	158
Toys, games, sports and musical equipment	9	1	8	3	4	2	2	7	2	-	7	15	60
Stationery, cases and picture frames	13	3	7	23	2	2	6	8	2	-	6	7	79
Perfumes and cosmetics	11	4	14	3	-	14	9	12	4	3	5	11	90

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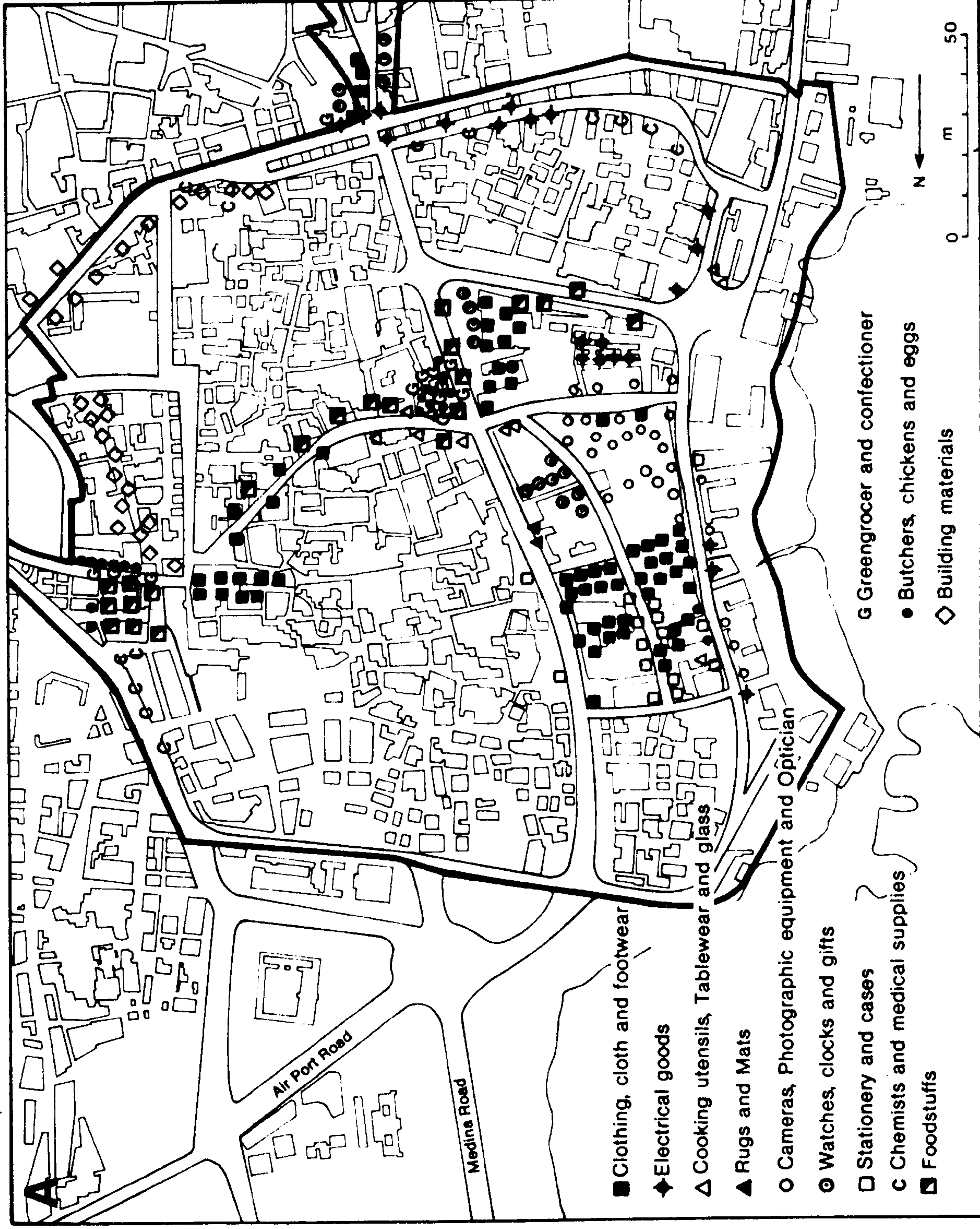
Table 4.19 (Cont.)

Kind of shop	King Abdulaziz Street	Kabel Street	Al Khask-eya & west to K. Abdulaziz St.	Suq Al Nada	King Faisal St. Between al Nada & King Faisal	Bet.al-Nada & K. Abdulaziz	Shari al-alawe	Suq Al Bado	Suq Al Jami	Bab Makkah	Bab Sharif	Total
Jewellery	11	1	2	5	3	81	8	49	-	-	38	203
Medecines and medical supplies	10	2	-	2	-	-	1	-	-	12	3	30
Foodstuffs, herbs, spices beverages, mixed nuts & tobacco products	9	6	35	4	9	7	3	3	6	76	28	235
Fruit, greengrocery and confectionery	8	2	3	5	-	4	-	-	-	48	7	91
Butchers, meat, chickens and eggs	4	-	1	1	-	1	-	-	-	30	10	75
Dates, oil, samens and charcoal	-	-	-	1	-	-	-	-	2	32	8	46
Building materials	12	-	6	-	1	-	-	-	-	59	7	85
Transport equipment and spare parts	-	-	-	-	-	-	-	-	-	23	6	29
Miscellaneous shops	20	10	24	16	4	24	18	12	4	50	90	282
Total	252	87	285	136	35	300	249	149	50	400	551	2,680

Source : Fieldwork 1982.

CENTRAL BUSINESS DISTRICT: DISTRIBUTION OF RETAIL OUTLETS, 1982

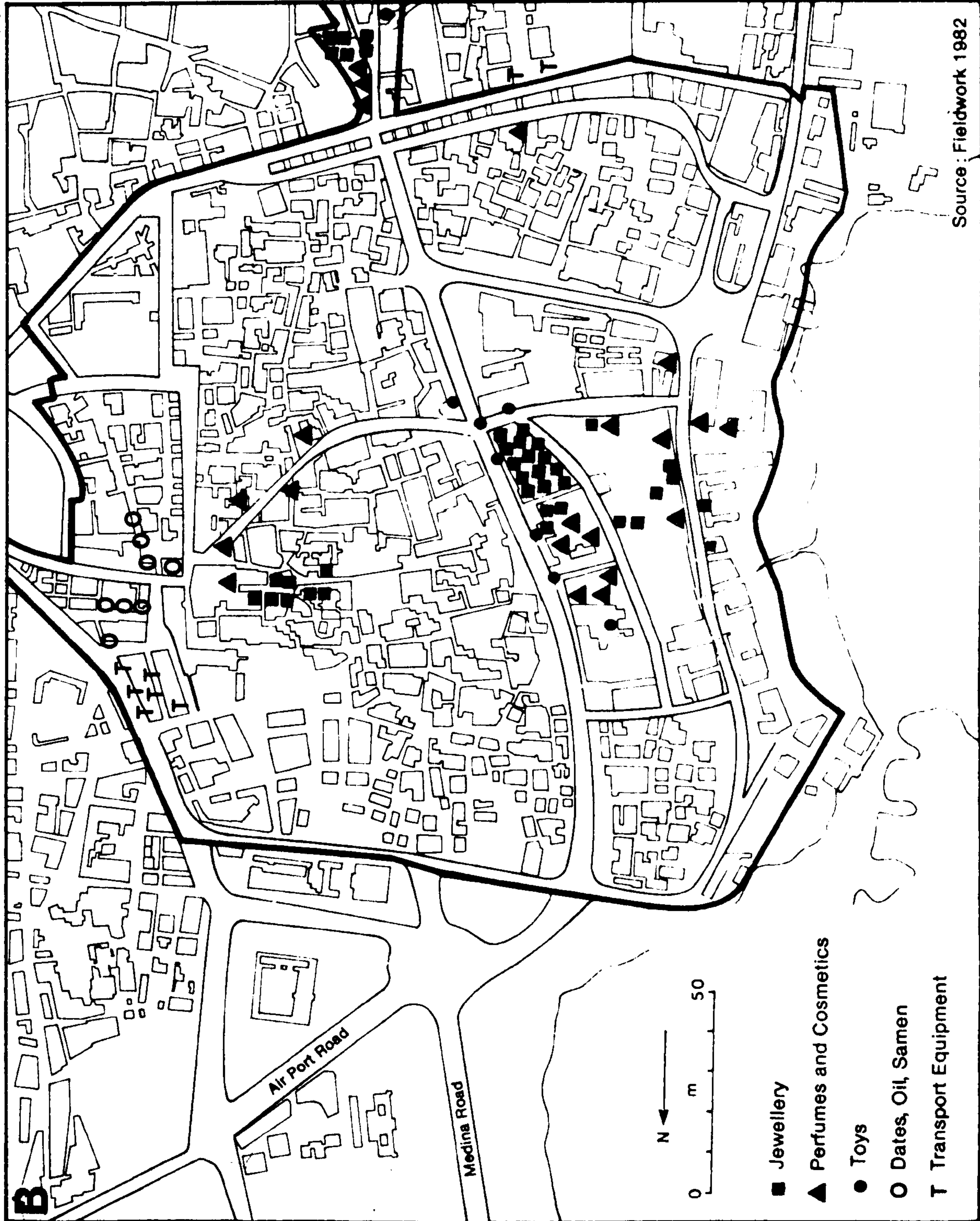
Fig. 4.5(A)



Source : Fieldwork 1982

CENTRAL BUSINESS DISTRICT : DISTRIBUTION OF RETAIL OUTLETS, 1982

Fig. 4.5(B)



flour mills, dates, oil and samen, whilst at the same time, the CBD contains the highest value retail specialities such as jewellery and watches. The first type of activity is usually located in the eastern and southern part of the CBD where land and rent value is low, the second type is located in the western part of the CBD where the highest land values of the city exist. Retailing is the most predominant commercial activity within the CBD and comprises more than three-quarters of the commerce.

There is no detailed data on the size of the floorspace of the shops located within the CBD. However these shops can be divided into three categories according to age. The first are the very old shops built during Turkish rule. These old shops have not been remodelled or enlarged and are generally of small floor area, i.e. the average is 5-9 sq.m. Most of these shops are found in Al-Khaskeya, al-alawe and the eastern part of Kabel street. All these shops are individually owned, and the capital investment is low. About 95 per cent of these shops are rented by the shopkeeper, rents varying considerably from 4,000 riyals to 6,000 riyals per annum. (according to old agreed contract).

The second category consists of shops which were established during the early period of Saudi rule on vacant land in and outside the city wall to the east and south. These shops are generally of medium floor area, averaging 16-50 sq. m. and were designed to avoid the disadvantages of the previous shops. They are constructed from cement-concrete.

The third category contains some of the previous type with modifications, together with the new shops established from 1970 onwards which have large floor areas, averaging 80-150 sq.m. Most of these shops occupy sites in the multi-storey buildings erected in King Abdulaziz street, King Faisal street and the western side of Kabel street. As mentioned earlier in this chapter the rent value of these

shops depend on the time of the original agreement. Valuable items such as jewellery, watches, cameras, men and women's fashions, television sets, radios, refrigerators etc. are to be found in these shops. The distribution and location of these retail shops can be seen in Figure 4.5 A and B.

1. Clothing, cloth and footwear shops : These types of shops are scattered throughout the CBD, but they are mostly concentrated in four major areas; between suq al-Nada and King Abdulaziz street (144 shops) 55 per cent of these sell cloth, 25 per cent footwear, the rest clothing. Between Suq al-Nada and King Faisal street (121 shops) 60 per cent of these sell cloth, 30 per cent clothing and the remainder footwear. In Al-Khaskeya (84 shops) and Suq al-Bado (82 shops) cloth selling is also dominant. Other areas still have large numbers of clothing, cloth and footwear shops, For example, Bab Sharif has 75 shops, Shari al-alawe 72 shops and King Abdulaziz street 53 shops (see Table 4.19). These kind of shops can be divided into two categories, the first large in size and trading in high value items; this type is located mainly in the westerly side of King Abdulaziz street and westerly side of Kabel street, associated with the fact that these streets have few shops compared to other areas. All these shops have large display windows and specialise in fashion clothing and footwear.

All of these fashions are foreign made (Italian, American, British) and very expensive. As a result, almost the entire clientele of these shops are either Saudis or foreigners of high income.

The second type of shop is small in size and specialises in low value items. These shops are located mainly in Bab Sharif, al-alawe street and Al Khaskeya. Here, again, displayed goods are foreign made, but come from Taiwan, China and from some Arab countries such as Syria

and Jordan. It is very easy to differentiate between the types of shops since this type hang their goods on walls or on doors rather than shown in large display windows. As a result, almost the entire clientele of these shops are either Saudis or foreigners of low income. Apart from this type, there are shops selling traditional clothing and footwear such as Abaya, for women, Meshlah, for men and footwear Madas. Some of these items are made locally but the largest proportion come from abroad, e.g. from Japan and some Arab countries. About 65 per cent of these traditional goods are located in the area between King Faisal street and Suq al-Nade, 20 per cent are in Shari al-alawe and Suq al-Bado and the remainder are distributed throughout the CBD. There is a great demand for these items from local people as well as foreigners. Most of this demand occurs during the Ramadan period before Eid and it has been estimated that about 35 per cent of the sales occurs during the month of Ramadan. Since about 70 per cent of the traditional clothes shops in the city are located in the CBD, these shops draw potential customers from all parts of the city as well as from the surrounding area.

2. Electrical goods consist of a variety of small and large luxury items such as refrigerators, laundry equipment, air conditioning systems, radios, television sets, video records etc. These shops are scattered throughout the CBD with special concentrations in Al-Khaskeya west to King Abdulaziz street, an area which contains about 30.4 per cent of the total electrical goods in the CBD. The second concentration is King Abdulaziz street where about 17.5 per cent of the electrical dealers are located. Other areas are Bab Sharif (11.5%) and Bab Makkah (10%). King Abdulaziz shops are large and have large show windows for all types of electrical goods. All these electrical goods are foreign made (from USA, UK, Italy and Germany). Al-Khaskeya and the shops in other areas are medium and small size shops. These shops usually contain smaller electrical appliances such as electric fans, lamps,

radios, television sets, etc. The large electrical appliance shops are the largest shops in the city and huge amounts of capital are invested. These shops draw potential customers from all parts of the city and from other Western cities such as Makkah, Taif and Medina. Apart from electrical goods, there are also stereo shops where cassette tapes can be purchased. There are two types of cassette shops available. The first and the most common are small stalls where cassettes are displayed on simple wooden shelves. The second type, while specialising in the sale of cassettes, also sell other musical goods and are usually located in much larger premises.

There is a high and varied demand for electrical goods since, in addition to demand from Saudis, there is an even greater demand especially for portable goods, from foreign labourers and from pilgrims during Hajj and Ramadan season. A high demand from foreigners temporarily resident or in transit has resulted in a great inflow of cheaper electrical goods in Saudi, compared to other Middle Eastern countries where customs duties are much higher. Unfortunately there is no data available to show how many electrical items are exported again from Saudi Arabia to neighbouring countries.

3. Shops selling cooking utensils, tableware and glass are concentrated into two locations, Shari al-alawe (25 shops) and Kabel street (13 shops). About 92 per cent of these shops are of medium size. These shops are smaller than some other cooking utensil shops in the city such as those of al-Sharafeya. The shops in Kabel street are related in location to the cooking utensils wholesalers since most of these wholesalers are located in King Faisal street and King Abdulaziz street. All these shops are owned by Saudis. About 75 per cent of the displayed goods are imported from Japan, Italy, France, UK. etc.

Cooking utensils consist of several types of material such as

china, glass, stainless steel and plastic. Direct contact with some owners of these shops shows that most people prefer stainless steel and plastic made goods rather than china and glass because plastic and stainless steel are less easily damaged than china and glass. Most of the plastic utensils are locally made either in Jeddah or elsewhere in Saudi Arabia.

4. Rug and mat shops consist of shops selling traditional wool rugs, mainly from Iran. These shops are mainly concentrated in the area between Suq Al-Nada and King Faisal street (14 shops) representing about 85 per cent of the rug shops in the CBD. These shops are not modernized and are without show windows, however, the size of rug shops in the CBD in general is larger than of others in the city such as those located west of the old Airport (Airport road). In this context there are only four very large rug stores located in Airport road and al-Medina road. Mat shops are scattered throughout the CBD with a special concentration in al-Khaskeya (12 shops) and in Shari al-alawe (115 shops). Apart from this, there are shops selling sponge mattresses, pillows, folding beds and steel chairs. About 95 per cent of these shops are located on the southern side of King Abdulaziz street. It has been estimated that about 80 per cent of the goods displayed in these shops are locally made. These shops draw a high proportion of customers since prices tend to be lower than those in the modern sector.

5. Camera and photographic, and optician premises number 67. About one half of these are situated in King Abdulaziz street and in the area between this and al-Nada street. All these shops occupy good sites within the CBD which are accessible to most of the city pedestrians. All goods displayed are imported, mainly from Japan. There are also photo studios which occupy good sites in the major streets such as King Abdulaziz street and Kabel street.

6. Shops selling watches, clocks and gifts are scattered throughout the CBD numbering in all 158. About 39 per cent of these are situated in al-Khaskeya and between al Nada and King Abdulaziz street, some 61 shops. In an unnamed street between al-Nada and King Faisal street there are a further 25, Bab Sharif with 20 and Kabel street 15. The rest of these shops are located in other commercial streets of the CBD. The existence of high numbers of watches and gift shops within the CBD is due primarily to the cheapness of items sold here compared to those in other parts of the city, and to the extensive choice. Most large shops in the CBD belong to the main distributors whose goods are cheaper and who have the latest models. There is a great demand for gift items from foreigners especially oriental gifts such as fancy goods, copper and silver work etc. Therefore the site selection is of commercial importance to these shopkeepers who deal mostly with foreign customers.

7. Shops selling toys are few in number, generally small and without show windows. Most displayed goods are imported from Japan but the range of types is more limited than in shops, for example in the new sector of the northern part of the city. The demand for toys increases during Ramadan before the Eid and in the summer holiday when parents are expected to buy toys for their children. It is interesting to note that toys in the CBD shops are cheaper than in the new sector shops and these shops still attract customers from all parts of the city.

8. Stationery, cases and picture frame shops are scattered throughout the CBD with a special concentration of stationery and book shops in suq al-Nada where there are 19 stationers and bookshops. The other important location is along the eastern side of King Abdulaziz street where there are 8 stationers. A high proportion of customers of these shops are school children and University students. Most of the suitcase shops are related in location to stationery and other shops. For example,

suitcases are more likely to be located near the men and women's clothing shops as along King Abdulaziz street. There are a few picture frame shops in the CBD and they are mostly located in the eastern side of King Abdulaziz street and in Bab Makkah.

9. Perfumes and cosmetic shops, 90 in number are scattered throughout the CBD. It is interesting to note that most large cosmetic shops in the city lie in and around King Abdulaziz street. There are four large cosmetic shops along the northern side of King Abdulaziz street with an average floor space of 150 sq.m. These shops are highly modernised with large show windows and are highly capitalised. All of these shops are owned by big Saudi businessmen, but are run by foreign employees. Other perfume shops are medium size and lie in four commercial areas i.e. Al-Khaskey, between al-Nada and King Faisal street, Shari al-Alawe and Bab Sharif. Both the first and the second area have 14 shops each, the third has 12 shops whereas the fourth has only 11 shops. All cosmetic materials are imported from abroad, particularly from France and Italy. The potential customers for large shops are Saudi, both men and women and foreigners from high income groups. The medium size shops attract both Saudis and foreigners from lower income groups. The large cosmetic shops are located in the most modern shopping site in the city, characterised by heavy pedestrian and vehicular traffic, particularly in the morning and evening hours, making these sites commercially attractive.
10. Jewellery shops are highly concentrated in three locations known as gold suqs. The first lies between suq al-Nada and King Faisal street. This suq is the largest single gold market in the city containing 81 shops selling mainly gold rings, bracelets, necklaces etc. About 39.7 per cent of the gold shops in the CBD are located in this market which draws its potential customers from all parts of the city, as well as customers from other cities such as Makkah, Yanbu and Taif. The second suq lies to the western side of suq al-Bado and contains 49 shops. It is interesting

to note that gold shops in this suq attract more rural customers than urban ones and contain more traditional gold items than the former location. The third suq lies in south-east of Bab Sharif with 38 gold shops, This suq attract more foreign people of low income groups than the other suqs. In addition to these suqs, jewellery shops are scattered in several areas. In King Abdulaziz street, as might be expected, the jewellery shops are large with big show windows and international firms with extensive capital are involved. These shops contain more expensive jewellery items such as diamonds, rubies, sapphires etc. These shops draw their customers from all parts of the city, but most of them are Saudi women and foreigners, both from high income groups. It is noticeable that the number of gold and jewellery shops is still increasing and owners try to select better sites in one of these established locations in order to attract more customers.

11. Chemists and medical supply shops lie mainly in two areas, King Abdulaziz street, with 10 chemists and Bab Makkah, with 12 chemists. The existence of chemist shops in the former location is related to the existence of private doctors' clinics sited mostly in the multi-storey buildings, enabling chemists to occupy the ground floors. The potential customers of these chemists are patients who come to see a private doctor. Most of the displayed medicines and medical supplies are imported from abroad, particularly Switzerland, USA, Italy and the UK. All medicines are subsidised by the government and so are relatively cheap. All the chemist shops are owned by Saudis but they are run by foreign pharmacists.

12. The number of foodstuff shops totals 235 scattered throughout the CBD with special concentrations in Bab Makkah, 76 shops, Shari al-alawe, 49 shops, and Al-Khaskeya, 35 shops. The foodstuff shops deal with a variety of materials such as canned food, herbs, spices, grain,

mixed nuts, tobacco products etc. Bab Makkah is one of the largest agglomeration of foodstuff shops in the city and is well known to contain the cheapest foodstuff shops in the city, so these shops draw their potential customers from all parts of the city and also from other regional towns. The second area is Shari al-alawe where foodstuff shops are scattered along the streets, particularly in the western half. A large number of pedestrians pass along this street as it is the connection between the eastern and western side of the CBD, and this has enhanced the importance of this site as a location of foodstuff shops. Most commercial activities in this location take place in the morning and evening.

The third location is to be found west of Al-Khaskeya where there are 35 shops selling a variety of foodstuffs. The proximity of municipal car parks attracts many customers to shop in this location. Almost all foodstuffs are imported from abroad, particularly from the USA, UK, Italy, Spain, Holland and Canada. The number of customers of these shops is generally increasing, particularly during the month of Shaban, Ramadan and during Hajj. Most of these shops are not modernised, as are supermarkets, and these retail locations are generally associated with foodstuff wholesalers where it is very easy for retailers to purchase any amount of foodstuffs from nearby wholesalers.

13. Greengrocery and confectionery shops are concentrated in Bab Makkah where there are 48 shops representing about 57 per cent of the total shops of this category in the CBD. The other main concentration is found in south-west Shari al-alawe where there are 14 shops. The greengrocery shops are dominant in this location and there is only one confectionery shop. This covered market, Tebila known mainly for vegetables and meat, was established as a private venture in 1962. All kinds of fresh vegetables and fruit are available in the greengrocery

shops, and prices of vegetables are lower than those in other shopping areas in the city. Therefore these shops attract people from many parts of the city, particularly from medium and low income groups. The number of confectionery shop is small if compared to other retail shops. There are two types of confectionery shops, the Saudi (Hijazi) confectionery shops where traditional sweets are produced such as Halaw Taheneya, Labaneya Hareysa etc. Apart from traditional sweets, these shops sell all kinds of cheese, olives, yogurt and milk. These shops are concentrated in Bab Makkah. Another type of confectionery shop sells modern confectionery, where all kinds of cakes and pastries are produced.

14. Butchers, chicken and egg shops are concentrated mainly in two locations. The first is Bab Makkah where there are 30 shops, the second is south west Shari al-alawe in Tebila market where there are 28 shops. All these shops are associated with greengrocery and foodstuff shops as they complement each other. About 90 per cent of displayed meat in the butcher shops is imported from Sudan, Syria, Egypt and Australia. Chickens are exceptions since all displayed chickens and eggs are produced locally, being kept live and slaughtered in the shops.

15. Dates, oil, saman and charcoal shops are concentrated mainly in Bab Makkah where there are 32 shops selling all the previous materials. This location contains about 90 per cent of the shops which sell such commodities in the whole city. These shops attract their potential customers from all parts of the city and most of the displayed goods are produced locally.

16. Building material shops are generally concentrated in two locations. In Bab Makkah there are 12 shops. These shops deal in a variety of building materials, such as cement, paint, wood, gypsum and sanitary ware. The demand for building materials has increased in recent years due to the expansion in public buildings and housing.

The concentration of these retail building material shops in this location is associated with the large number of wholesalers in this location. This location attracts most builders and contractors from all parts of the city. The easterly side of King Abdulaziz is characterized by the concentration of the sanitary ware shops. About 70 per cent of building materials are imported from abroad, particularly Japan, Italy, France, USA and the UK.

17. Transport equipment and spare part shops are mostly located in Bab Makkah where there are 23 shops, of which 2 are large car showrooms and the remainder are spare part shops; these attract their potential customers from all parts of the city. All the displayed goods are imported from abroad, particularly Japan, USA, Italy and Germany.

In addition to the previously mentioned retail shops there are also about 282 stallholders selling goods such as toys, chewing gum, traditional tooth brushes, masawek, newspapers, akhtam, perfume, vegetables etc. These stallholders are scattered throughout the CBD.

2. Outlying Business Centres (21)

These centres can be distinguished from the neighbourhood markets considered in the next section by the wider range of services that they offer and the greater number of shops supplying luxury goods. These centres are also characterized by the same type of retail structure found in the central business district but with a lower density.

Outlying business centres can be divided into two categories.

a. Traditional outlying Business Centre:

This type was established to serve the areas of first phase expansion outside the old residential area. The size of the population they serve and the quality of the goods they offer therefore depend on their location. Most of these traditional centres are located in the northern district of the CBD, as might be expected

since the expansion of the built-up area was mainly in this direction (see Figure 4.4).

In this zone two of the main outlying business centres are located, Bani Malik and al-Ruwais, established originally to serve the residents of two villages so named. When the city started to expand, and the city engulfed the villages, the two commercial nuclei also expanded in size and range of services. Today these two centres serve much of the population of the city as a whole. The Bani Malik Centre is located north east of the CBD. This centre contains about 485 shops, some of which are 5 x 5 metres in area and others only 2 x 3 metres. This centre, from the commercial land use point of view, is one of the most nucleated commercial areas with a high degree of commercial intensity. Although the majority of the retailers deal in dry groceries, meat, greengrocery, clothing, housing utensils and building materials there are also a large number of service facilities which are occasionally grouped but usually scattered throughout the centre. Among these services there are tailors, electricians, restaurants, teashops of various sizes and bakeries. This market, however, lacks some of the very important services, such as private medical clinics, hotels and recreation facilities (see Chapter 6). This centre offers cheap goods compared to other shopping areas in the city. For this reason this centre draws customers from several parts of the city, but most of its potential customers are foreigners and Saudis from low income groups. As most of the customers are from low income groups the retailers try to introduce commodities at competitive prices to entice the customers away from the CBD. The market experiences dense pedestrian traffic from late morning until late evening. It is noteworthy that the number of shops in this market has increased in recent years due to the increase in the number of foreigners. For example, during the three months of

fieldwork in 1983 10 shops were opened, in addition to a modern single storey brick and reinforced concrete market building, total area 50 x 80 metres, and which houses more than 30 stalls.

The second outlying business centre with a traditional nucleus is Al-Ruwais, located north west of the CBD (Figure 4.4). It serves the daily needs of this area, and also includes a number of luxury shops and a variety of services. The nuclear retail centre developed where a series of medium width lanes leading off the old main road of Al-Ruwais, though a number of shops and some of the street traders have now spread radially away from the node as customers have become attracted from surrounding quarters. This centre has expanded to the south east along the main road and shops have developed on both sides of the paved main traffic street, and are not more than one shop in depth. Many of these shops are converted houses whose occupants have taken advantage of the roadside location. Commercial land use is most intensive near the market and thins out towards the ends of the street. The shops along the easterly side of the main road leading to Palestine road, are large with display windows. The retail shops on this main road include supermarkets, large sanitary ware shops, stationery and women's clothing shops, ordinary dry grocers which also sell other goods, restaurants, cafeterias, greengroceries, chicken and egg shops, butchers and banks. At the northern end of the main road in the intersection with Palestine road, a new shopping centre has been built. It houses more than 25 modern shops. The eastern side of the main road is occupied by grocery shops and it is common to find interspersed between them some greengrocers also selling fruit, confectionery, chickens and eggs and fancy goods. Most of these shops are small, each 3 x 4 metres in area, and have a limited variety of goods. The market experiences dense pedestrianisation and car traffic flow all day particularly during evening hours.

b. Modern Outlying Business Centres

This type of business centre has been introduced recently as a result of the population increase, particularly of foreigners. Problems of car parking, vehicular/pedestrian conflict, the desire to improve the shopping environment for the shopper and changing patterns of retailing and goods handling: all these factors have played an important part in the success of these modern outlying business centres over the traditional ones. These centres can be distinguished from the well distributed neighbourhood markets by the wider range of retail shops, and the greater number of luxury shops they contain. The first, and largest outlying business centre, known as Jeddah International Market was built on the Medina highway early in 1981. This centre was designed to provide, in addition to its retail function, a focal point for social life. About 35 per cent of the customers who come to this centre do so to enjoy something more than shopping, and use some of its very beautiful amenity areas, and landscape design and decor have become important here and in other such centres. This centre contains 95 shops of medium and large size, some of them 10 x 8 metres in area and others 6 x 4 metres, the mean measurement being 5 x 4 metres. About 30 different businesses exist in this centre selling items such as jewellery, watches and clock cases, cloth, women's, men's and children's clothing, stereo and photographic equipment, as well as car showrooms etc. About 75 per cent of these shops are branches of main shops in the central business district. In addition to these medium and large size shops a large supermarket is also located here. One of the advantages of this centre, not available in other centres and which attracts a large number of customers from a wide area, is a very large ground level parking area, together with further parking facilities on the roof of the centre itself. Heavy pedestrian traffic occurs in the evening hours and particularly during the weekend period.

The other notable centre is that of al-Seteen which, together with al-Sharafeya road, can be considered as a single outlying business centre. Al-Seteen centre consists of seven storeys, each storey serving several related items; for example, cosmetics and perfume, women's clothing and jewellery, are all found on one floor. So this centre handles about 20 different businesses. This centre also started functioning in early 1981, and is located at the intersection of Prince Fahad street (First alsteen street) and al-Sharafeya street. It has parking facilities but they are inadequate for the centre. The centre attracts customers from a wide area and commuters through Prince Fahad street and al-Sharafey street.

In addition to the previous traditional and modern outlying business centres a few other centres are located in other areas of the city, but they are at the moment smaller and serve fewer customers than those noted above. Suq al Yomana to the south-east of the port, is such a traditional centre. Jeddah shopping centre, on the other hand, is a modern outlying centre in the northern part, at the beginning of Medina Highway which has, since 1982, attracted neighbouring shopping development, including a supermarket.

It is significant that in response to the city's population increase, the increase in foreign residents and the changing nature of consumer demand, the structure of retail marketing is continually changing. A cluster of small shops may develop into a larger neighbourhood market and a neighbourhood market may be converted to an outlying business centre. For instance Al-Kandara market used to be a neighbourhood market. At present this market can be classified as an outlying business centre as it attracts customers from a much wider area. In the late 1960's this market had about 30-40 shops; today, 1985, there are 520.

Al-Kandara is a mixture of traditional and modern outlying business centre. This is because, that in addition to the traditional shops which

occupy the first floor of multi-storey buildings, two modern shopping centres have been erected, the first adjacent to the main market in the north east, and the second lying on the other side of Prince Fahad Street in the south east.

This market is easily accessible to pedestrian traffic from a densely populated neighbouring residential area whilst its importance will become greater when Prince Fahad street, which is planned to be one of the largest and widest street in the city (60 metres in width) is completed. The majority of the retailers deal in ready-made clothing, especially for women and children, jewellery, gifts, cosmetics and perfumes, kitchen utensils, watches, toys etc. It also has a number of service facilities which are occasionally grouped though usually scattered throughout the centre. Among these services there are tailors, cafeterias of various sizes, restaurants, men's hairdressers and electricians. Since fancy goods are dominant, most buyers are female, used to bargaining for their goods. Rush hour peaks are well marked in Al-Kandara especially in the late afternoon and in the evenings. Another characteristic of this market is its unplanned appearance, which is partly a result of private development without municipal supervision and management. The centre also lacks recreation and parking facilities.

3. The Neighbourhood Markets (22)

In contrast to the category of outlying business centres, neighbourhood markets have relatively small concentrations of retail establishments selling luxury goods and meeting common everyday needs; most shops supply only fancy and frequently used goods. Furthermore, the number and range of non-retail service establishments is smaller. These neighbourhood markets, usually consisting of about 30 to 100 retail shops, are fairly well scattered throughout the city (Figure 4.4) as entrepreneurs have followed the pattern of residential developments. The size of the

populations they serve and the quality of the goods they offer therefore depend on their location. Nevertheless, whilst recently planned neighbourhood markets have been built all over the city, especially in the northern areas, the relationship between their location and local neighbourhood demand is imperfect since some quarters have more than necessary to meet their needs, whilst others are less adequately served. In this context it should be noted that planned units of this kind are planned only in the sense of being purpose designed and constructed. In some cases, such private developments, are phased in with the Municipality's master plan but this is by no means the rule, or even necessary.

Neighbourhood markets can be grouped according to their physical characteristics and the kind and quality of goods available.

First, there are modern single-storey buildings designed originally as shopping centres, some recent ones reflecting the traditional architecture of old Jeddah, with "Mushrabiya and Rawashina". Some of these modern neighbourhood market buildings have a second storey designed for offices or medical surgeries, but they usually house a large supermarket and about 15-25 types of businesses selling cosmetics and perfumes, watches and clocks, toys, men's, women's, children's clothing, shoes, TV, radios, and stereo equipment. Some of these markets contain a branch of a bank or money changer and other services such as tailors, electricians and varying sizes of cafeteria.

The second type consists of shops occupying the ground floor of large multi-storey buildings. The number of shops in these markets vary between 10-30 shops. Some of these buildings were originally designed to have the ground floor as shops and the first floor as offices and the remaining floor as residential flats, but others were just buildings converted to commercial activities. The number of retail shops and services in these markets varies. Some have between 10-15 types of

businesses, others between 10-30. These markets satisfy some of the neighbourhood demands whilst other needs are satisfied from the nearest outlying business centres. There is, for example, great variation in the service facilities available and in some market centres services are completely absent. Generally these markets are fairly scattered throughout the city (Figure 4.4).

The third type is really a cluster of stores in a very small commercial nucleation consisting of ten to fifteen retail shops clustered together. Ordinarily, they contain one or two general goods stores, a cold drinks stall, a local bakery, chicken and eggs shops, and a greengrocery-fruit stall. Larger clusters attract a laundry, barber, shops selling fool (beans) and motahq, an estate broker and electrician. Generally they are concentrated in the old quarters of the city rather than in the new.

The approximate number of established neighbourhood markets is around 150. The growth in number of these markets is not controlled by the municipal authorities but depends upon the personal mercantile decision. Furthermore, the authorities have not controlled either the number of shops or the type of shops in each market, and as a result some quarters have more than their needs while others need more modern markets. The only control by the municipality is imposition of rules governing the shape and outside appearance of units and the parking facilities.

Generally, it has been found that there is a correlation between income and the distribution of the purpose designed neighbourhood markets located in higher-income quarters with high levels of private car ownership. Converted buildings or store-clusters are more commonly located in low-income quarters.

4. Commercial Streets (23)

Commercial streets have expanded in recent years as a result of the development of modern roads and public and private transport in the city. They are characterized by the shallow depth of the commercial activity which seldom extends more than one shop from the road. Although they serve nearby residents, they also serve people passing along the roads. The type of goods and the services offered differs from one street to another. Here the retail trade and commercial services have grown, particularly because of relative ease of access and to some extent the provision of parking space. However, the main reason behind the development of these linear zones has been the rapid expansion of the built-up areas, particularly in the northern direction.

Expansion in trade and commerce, with a growing need for luxury goods, has established the need for commercial sites outside the old-established and the recently built nucleated market centres and in particular modern shops and showrooms. Because of this, most first floors of newly built buildings along main roads in areas of municipality development land distant from the city centre, particularly in the northern part, are being devoted to such activities. Furthermore, the conversion of many residential premises into commercial sites especially along main streets is now taking place in many parts of the city.

The main city streets, with considerable concentrations of shops (see Figure 4.4) are Medina Road, Makkah Road, Airport Road, Sharafeya street (King Khalid street), Prince Fahad street (al-steen), Baghdadeya Road, Al-Mena Road, Sharri al Jamiah (university road), Makarona street and Kilo 2, Palestine street, Al-Tahlya road, and Khalid ibn al-waleed Road more than twenty other streets are also important, but with a lower density of shops. Generally speaking, specialization in specific items

is a common practice along some main streets. For example, al-Sharafeya for large shops with kitchen utensils, Prince Fahad street for large furniture stores and Kilo 2 for car spare parts. In other streets specialization is not common and it is normal to find a collection of several types of retail shops.

The following streets have been chosen as case-samples for commercial streets in Jeddah as they can be assigned a similar place in the retail hierarchy to the neighbourhood markets.

a. Shari Prince Fahad (al-seteen)

This street represents the pattern of other new commercial streets in the city. It runs from King Abdulaziz Airport in a southern direction until it reaches Cornich street, south-west of the CBD. The southern part of the street is still under construction and most retail functions and services occupy the area between al-Tahleya street and al-Sharafeya street, some 6.2 km in length. This street is experiencing the development of the most modern commercial establishments in Jeddah. It contains 168 large shops, each with an average floor space of 100 sq.m. The street has several large furniture stores which are concentrated here. Several other modern stores which supply stationery and books, kitchen utensils, TV and radio, fashion stores and chemists are also present. The services include hair dressers, modern cafes and restaurants with eating places of various sizes, first class tailors, electricians, plumbers and real estate offices. Most of the buildings are of modern multi-storey type. The ground floor is reserved for shops, and the upper floors for residential units or offices. The street experiences heavy congestion specially during the late afternoon and evening, largely because this street is also used as the fastest route for commuters travelling north to south and vice versa.

b. Sharii al-Sharafeya (King Khalid street)

This street extends westward, from the old airport to Medina road, in length about 1.9 km. The total number of commercial premises is 160, with average floor space of about 30 sq. metres. In addition to specialising in kitchen utensils the street has a mixture of retail trade stores selling dry groceries, greengroceries, stationery, chemists', TV and radio, electrical tools and fancy goods shops, and services such as electricians, hairdressers, tailors, coffeeshops, restaurants, gas stations and carpenters. This street serves the needs of the local residents as well as passing customers. Some of the buildings are single storey, while others have more than one storey. The ground floor is reserved for shops and the upper floors for residential units. The traffic rush hour is in the late afternoon and evening.

These two streets illustrate the new type of linear commercial development.

5. Isolated shops (24)

Throughout the city single shopping units are located here and at the intersections of narrow lanes, street corners, and highway intersections. The distribution of these shops is closely associated with the residential areas (Figure 4.4). The major function of these premises is to supply convenience goods such as groceries, greengroceries etc. More recently a novel element has been introduced in the newer part of the city - small dispersed supermarkets. The range of goods in the supermarkets tends to be of a higher order and better quality. Isolated service units, such as automotive repairers, teashops, light electricians, plumbers, clothes ironing services and carpenters, are also dispersed throughout the city. Depending on the location and the size of the shop, such premises attract a range of customers from as few as 100 to as many as 1,000 persons per day.

B. Financial Function

The importance of Jeddah as the major trading centre for the whole country has led to its financial and professional national eminence. Today Jeddah is the financial centre for the Western region, and the most significant centre in the Kingdom. Although Dammam accounts for the greatest number of cheques handled in any one national centre, Jeddah accounts for the bulk of the value; in 1975-76, 64 per cent by value of all cheques cleared in the country went through Jeddah banks.⁽²⁵⁾ This indicates that Jeddah, as the traditional entrepôt, continues to be the nucleus of the country's commercial activities.

Private Financial Institutions

From the fieldwork survey carried out by the writer, private financial institutions can be divided into two categories:

1. Banks
2. Money changers

1. Banks

Banking is relatively new to the country and until money was widely used in the Kingdom, money changers provided sufficient banking type services. However, almost 100 per cent of the banks introduced to the Kingdom originally began their businesses in Jeddah, beginning in 1882 with a commercial company known as Gently Henkly. This company later transferred all its financial activities to the British Bank and continued as a commercial firm only. Later, other foreign commercial banks were introduced to the country and here again they all started in Jeddah, some opening branches in other big cities in the country such as Riyadh and Dammam. For example, the Dutch Bank opened in Jeddah in 1926, the Banque de Indochine in 1947, Al Bank al-Arabie in 1948 and the British Bank 1950.⁽²⁶⁾ The concentration of foreign banks in Jeddah is a very

good indication of the importance of Jeddah as a financial, as well as a commercial centre for the whole country.

Before 1977-78 there were only nine foreign banks in Jeddah, a small number compared with other cities in the Gulf region such as Abu Dhabi where there are over 40 banks and almost 50 in Dubai, where the market for financial services was much smaller than that of Saudi Arabia, and where the future potential was extremely limited. The major reason for the restrictive attitude of the Saudi Arabian Monetary Agency (SAMA) to foreign banks was of course political, to some extent reflecting the nationalistic spirit within the country. Secondly, it was regarded as unseemly for the country in which Islam's holiest places were sited to aspire to becoming a major international financial centre, with all that would be implied concerning interest-rate policy and financial "wheeling and dealing" generally. Thirdly, it was a result of the conservatism of SAMA itself, which was reinforced by the problem of the mid-1960s when the National Commercial Bank accumulated a significant amount of bad debts. As rumours started to spread in the small and closely interwoven financial community of Jeddah, there was a loss of confidence in the bank, and a spate of withdrawals of deposits. The bank was forced to turn to SAMA for help, but the young agency had difficulty in dealing with the crisis due to its own inexperience so there was certainly no desire to attract fringe financial undertakings of unknown standing into the Kingdom. Finally, there may have been some internal worries on the part of SAMA, especially prior to the 1974 expansion of its own reserve base. (27)

Apart from controlling the number of foreign commercial banks there was also control of the national regional distribution of branches and the general operations of commercial banks, in order to influence the composition of their loans and to control the total credit and thus

liquidity in the Kingdom. (28) The number of approved foreign banks was dependent upon the countries from which they originated having significant numbers of nationals working in Saudi Arabia, or if there was a considerable volume of bilateral trade. The mere fact of a bank handling a large amount of Saudi investment funds in overseas markets was not sufficient criterion for the Monetary Authority to grant permission for it to operate domestically. (29)

By 1977-1978 the bank situation in Jeddah can be seen to have divided into two categories; first, Saudi Banks and second, Saudised Banks.

a. Saudi Banks

In the Kingdom there are only two Saudi banks, the National Commercial Bank and Riyadh Bank. The National Commercial Bank was the first Saudi Bank established in Jeddah and in the Kingdom in 1938. The idea came first when some leading financial families realised the opportunities presented by the creation of a full Saudi bank in Jeddah to compete with the three foreign commercial banks in the country. The establishment of the new institution was seen as based on taking over a share of potential financial business at the expense of the existing money-changers. It also offered the possibility of acting as bankers for the Kingdom's rulers, for no Central Monetary authority existed until 1952 when the Saudi Arabian Monetary Agency (SAMA) was founded. It is worth remembering that the National Commercial Bank was only the third wholly indigenous bank to be established in the entire Arab world; its forerunners were the originally Jerusalem-based Arab Bank, an essentially Palestinian institution, and Bank Misr of Egypt. Although the National Commercial Bank, since its foundation until 1950, was the sole local commercial bank operating in the Kingdom, its expansion was fairly modest. It was not until the late 1940's that branches were opened outside the Hijaz, in Riyadh and al-Khobar. (30)

By 1982 the National Commercial Bank had 125 branches distributed throughout the Kingdom. In Jeddah itself there are 22 branches distributed throughout the city. In addition to these branches, there are other branches operating only during Hajj and Ramadan season. These branches are located in three places, King Abdulaziz airport, Jeddah port and the pilgrimage cities.⁽³¹⁾ The purpose of these branches is to offer financial services for pilgrims during the religious season.

The second Saudi bank is the Riyadh Bank established in 1957. The creation of this bank at that time was a result of the expansion of Saudi economic activity based on the increase of oil production in the 1950's, and with imports booming as government expenditure trickled down into private hands. In spite of the fact that the founders of this bank were from some leading financial families in the country, the headquarters for this bank is also located in Jeddah and this shows that the founders believe that Jeddah was the natural place for such a bank as the Kingdom's commercial centre.

Since its foundation the Riyadh Bank has expanded rapidly and by 1982 there were 100 branches distributed throughout the Kingdom. The number of branches in Jeddah is fewer than those of the National Commercial Bank branches, with only 7 branches distributed throughout the city.

b. Saudised Banks

As a result of the developing financial strength of both Saudi banks, particularly the National Commercial Bank, and the restrictions applied by SAMA against foreign banks, such foreign banks were unable to expand in the Kingdom. From 1977-1978 foreign banks were permitted to operate only if their establishments in the Kingdom were 60 per cent assets owned by Saudis. They all complied, except for Citicorps which was reluctant to sacrifice its traditional policy of wholly-owned

foreign subsidiaries. However, in mid 1979, an agreement was concluded between Citicorps and the Saudi government whereby the former accepted the conditions.⁽³²⁾

The banks were renamed to reflect their joint Saudi-foreign character : Bank al-Saudi al-Fransi (formerly banque de Indochine et de Suez), al-Bank al-Saudi al-Hollandi (Algemeen bank), al bank al-Saudi al-Brittani (British Bank of Middle East); Citibank became al-bank al-Saudi al-Amriki.

Applying the Saudis rule has helped to increase the number of jointly-owned bank branches throughout the country. About 41 per cent of the Saudised banks branches are located in Jeddah where there are 21 branches.⁽³³⁾

The major activities and source of revenue for the banks in general are: First, letters of credit, used by all foreign companies exporting to Saudi Arabia; the banks charge between 1/8 and 1/4 of 1 per cent of the value of the letter of credit, this being a very important source of revenue. Secondly, foreign exchange dealing is another important source of revenue in conditions where imports and exports are great. These transactions are mainly denominated in dollars and thus there is a huge Riyal dollar exchange marketing operation. The volume of transactions on other currencies is small when compared with dollar transactions, but the banks charge much larger commissions for non-dollar currencies. Thirdly, banks also engage in traditional banking activities, such as accepting accounts and lending money. Banks do not charge interest on loans but impose afce called a service charge or commission based on the duration of the loan and the prevailing rates of interest on the Saudi riyals market. Usually the medium term rates are between 7 and 10 per cent annually.⁽³⁴⁾

Opening hours in the banks extend from 8.30 to 12 in the morning and 4.0 to 6.0 in the afternoon for regular days. They open only in the morning on Thursdays and close all day Friday. By 1982, about 95 per cent of all Saudi and Saudised banks had their headquarters in Jeddah. Some of the banks transferred activities to Riyadh as a result of the transfer of SAMA from Jeddah to Riyadh in 1978 but this did not affect the high percentage of headquarters located in Jeddah, since most banks prefer to have their headquarters in Jeddah because of the intensity of business and commercial activity.

This is supported from the answer to the fieldwork questionnaire sent to all banks in Jeddah; almost 100 per cent of them chose Jeddah as the location for their headquarters as they wanted to maximise financial facilities for commercial activities. About 85 per cent of lending and other financial facilities are for commercial activities, 10 per cent for industrial activities and 5 per cent for other. (35) Lending facilities for industrial activities by Saudi banks is higher than by Saudised banks because the latter prefer to invest in commercial activities.

Other comparisons can be made between Jeddah's banks and other national centres. Jeddah bank facilities are standard, the only difference being the official establishments' accounts which are more prevalent in Riyadh than in Jeddah. Cheque service is not as common in Jeddah or in other Saudi cities as in Western, particularly American cities where people use cheques widely to meet everyday demands, the cheque service being used only for withdrawal of deposits. As a result of this, it is quite normal to see a person carrying suitcases or pockets full of banknotes. This kind of habit was acceptable in the past, but at the present time it is obviously difficult and dangerous to move with large amounts of cash partly because of the increase in the

crime rate in Jeddah as in other large cities. The banks, therefore, should develop their cheque services to cope with the increased movement of money because, at present, cashing a cheque frequently takes almost half an hour at most banks!

During the 1980's a new banking service was developed in Jeddah as well as in some other large cities in Saudi Arabia, i.e. branches opened specifically for the use of women. This kind of service is unique in the world and is only available in Saudi Arabia. This is a result of applying Islamic law which does not allow women to mix with men. There were two women's branches in Jeddah by the end of 1982.

The distribution pattern of banks in Jeddah shows that about 95 per cent of the banks' headquarters are located in the central business centre (see Figure 4.6). Branches are spreading all over the city as people increasingly use bank accounts. Headquarters in the CBD deal with large business, while branches in the suburbs cater for personal and small business accounts. The establishment of such branches will generate their own business by virtue of the convenience they afford.

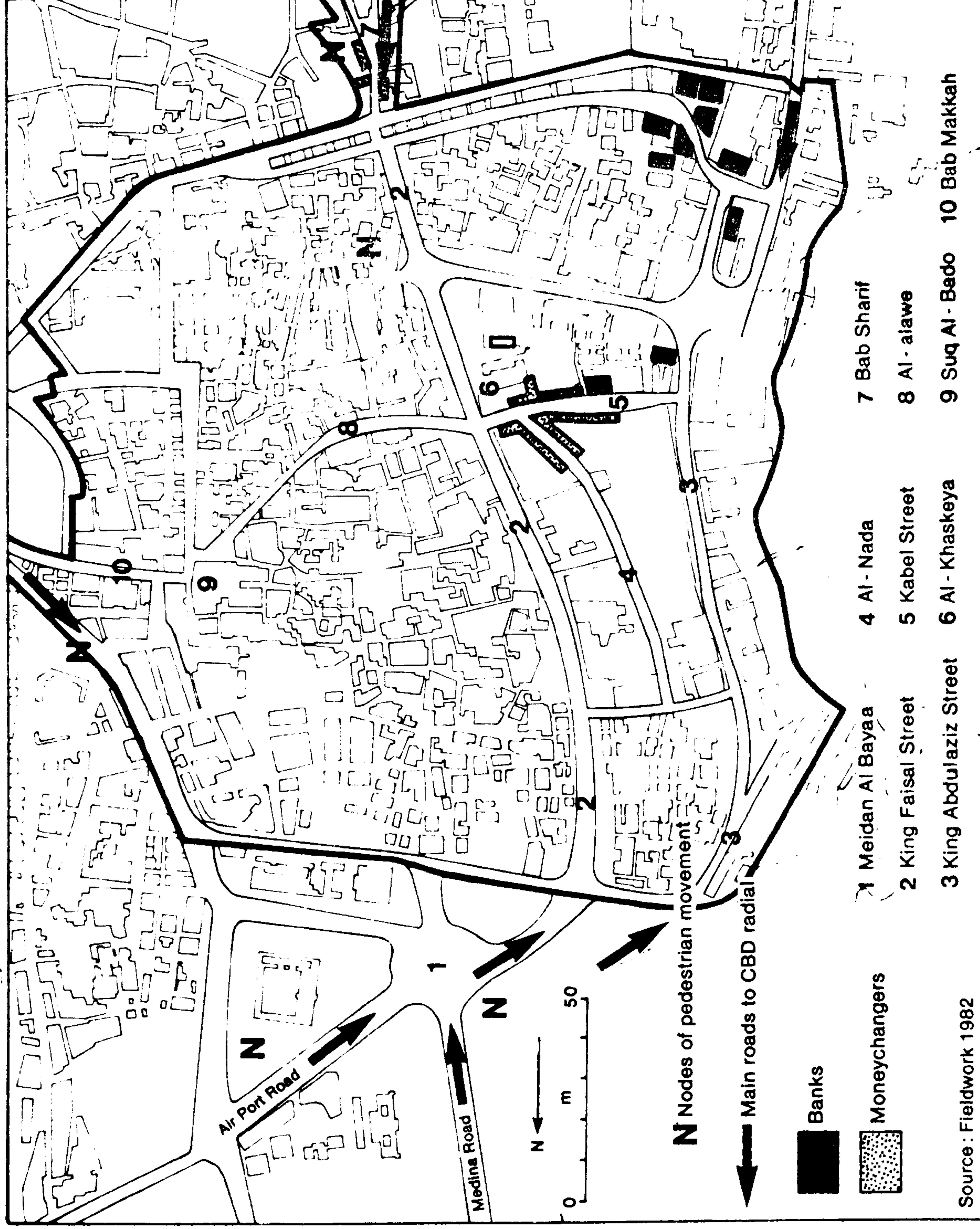
2. Money changers

Until 1926 when the first bank opened in Jeddah, money changers provided sufficient banking institutions. Their functions were confined mainly to converting foreign currencies into Saudi currencies after national unification and before that to local currencies such as the "al Riyal al Majedi", and vice versa. Of course, traditional credit institutions - money lenders - also existed. Attention will be paid here only to money changers as the major function of most is still to change money.

Jeddah, together with some other Hijazi cities, such as Makkah and Medina, is the traditional place for money changing in the Kingdom.

CBD STREET NAMES, PEDESTRIAN MOVEMENT, MAIN RADIAL ROADS AND DISTRIBUTION OF BANKS
AND MONEYCHANGERS, JEDDAH 1982

Fig. 4.6



Source : Fieldwork 1982

Even as early as the lifetime of Mohammed, *Peace be upon him*, fourteen hundred years ago, the cities of the Hijaz obtained supplies from a wide variety of geographically dispersed sources, and the money changers of these cities were able to provide appropriate media of exchange which could be used to meet import payments. Gold and silver coins were used to purchase grain supplies from the highlands of Yemen, fruit and vegetables from the Nile Valley, and cloves and spices from as far as the East African coast. (36)

The role of money changers in Saudi Arabia is especially significant if compared to other Middle Eastern countries. Furthermore, some of the money changers, play a large role of equal importance to that of the banks in some financial activities, since most people prefer to deal with money changers as they charge lower commission than do the banks. In addition it is easier to deal with money changers than with banks because banks require more paper-work than money changers.

Money changers can be divided into three categories according to their size and the activities they perform.

1) Large-scale money changers with more than one branch in Jeddah and sometimes over one hundred branches all over the Kingdom, such as al-Rajhi Brothers, with 19 branches in Jeddah and 210 branches distributed throughout the Kingdom. This firm constitutes the biggest moneychanging group in the country and possibly the world. In addition to money exchanging activities, such money changers deal also with acquisition of travellers cheques or the writing of money orders and cheques, as well as other activities outside the sphere of monetary matters as they involve selling precious metals for jewellery. The conversion of gold coins and bullion into jewellery and vice versa was an important activity for such establishments, and it is worth noting that this activity has declined recently to be replaced by active interest in

general trade, "wholesaling" and construction activities. The size of premises of this type is large if compared to the other two types, with an average floor space of 90 sq.m. in buildings two storeys high. Numerically, however, this type represent a small proportion of all money changers.

The majority of the labour force within the city is mainly from Arab and Far Eastern countries, and is used to dealing with such large money changers since they offer lower rates than conventional banks and also have an extensive network of corresponding institutions abroad. The number of employees involved ranges between 10-20 workers.

2) Medium-scale money changers with one or two branches in Jeddah, and 10-20 branches outside Jeddah distributed throughout the country. Of course this type of money changers does not have the same power as the first type, but it still attracts foreigners as well as Saudis. Some of the money changers in this category have developed as a result of high profit from money changing, while others developed as a result of linking with various types of business activities such as construction, or foodstuff wholesaling. The activities performed by this type of firm are similar to the activities performed by the first type but less extensive. About 80 per cent of this type are involved in other activities, while 20 per cent deal only with money changing.

The floorspace available to this type of premises varies between 30-50 sq.m. The number of employees is between 5-10 persons, and about 60 per cent of the employees are non-Saudi, mainly from Hadramawt.

3) Small-scale money changers :These types of money changers do not have any branches, either in Jeddah or in other parts of the country and do not deal with any other kind of activity, acting purely as money changers. Such small-scale operators represent the majority of all money changers,

small business enterprises with only one to three persons involved, usually family members. Their premises are very small, varying in size between 6 and 9 sq.m. but most are just a part of another shop where the changer has a safe for cash storage. A few of these money changers are involved in exchanging gold and silver to riyals and vice versa. Such small money changers obtain exchange rate information from the large money changers, particularly Al-Rajihi brothers, by direct contact or by telephone calls. The large money changers obtain the exchange rate through international telex facilities.

Unlike the banks, which obtain much of their foreign exchange from the Saudi Arabian Monetary Agency or else from Bahrain, the large money changers deal directly with centres in Europe, especially Zurich. Special couriers are sent to Switzerland on a regular basis to obtain foreign banknotes and gold to augment the supplies which are obtained from the currency changed by the foreigners within the city, and that of Saudi citizens returning from abroad. The large money changers through this system can obtain their currency and gold at more favourable rates than the conventional banks, and as they also act as suppliers to the other money changers, they can obtain the standard discounts for bulk purchase. Before the Lebanese Civil War, much of this business was conducted through Beirut, but since the moneychangers have discovered just how efficient Swiss markets can be, it is unlikely they will revert to using that troubled city again.⁽³⁷⁾ Western concepts, such as price wars and special discount offers, are unheard of in the traditional souq economy, and money changers are not aggressively trying to take over the whole business and drive their rivals into liquidation. Furthermore, such cut-throat methods would be out of keeping with the teachings of the Koran, and hence any trend towards monopolisation is avoided. Instead of expansion being through acquisition and merger, it has become through opening further branches in new commercial areas

as the economy of the Kingdom grew.⁽³⁸⁾

The distribution of money changers shows a great concentration in the CBD where about 96 per cent of them are located.⁽⁵⁹⁾ Almost all of these are concentrated in Kabel street, Al Khaskeya and al-suq al Kabeer forming a cross-like shape (Figure 4.6). There is a great advantage of such concentrations, for both the money changers and the customers. For money changers this concentration offers them a fast rates information service and easy temporary inter-borrowing of cash. For the customer, it is simple to move among the money changers to find the lowest rates. Interviews with Saudi and non-Saudi customers show that they both prefer to check all money changers before they can decide which one has the lowest rate. This explains why the CBD money changers attract people from all over the city.

The religious period (Hajj and Ramadan) account for about 35 per cent of annual business transactions, a proportion which is reported to have declined since the oil boom when Hajj and Ramadan season were more important. The decline in the importance of Hajj and Ramadan business can be related to the fact that pilgrims increasingly bring with them some of the local currency which they can use during their stay in Jeddah. Also, some of the pilgrims do not stay in Jeddah, they go directly to Medina and Makkah where they can change their money. From the writer's experience some of the Motawefs change some of the pilgrims' money, especially dollars or English pounds to Riyals, and then change it later to get some of the profit when the rate is higher. Until about 1978-79, seasonal money changers were to be found in the CBD, the Pilgrim city, the Airport, and Jeddah Port but this has now been prohibited by the government.

At the present, the major clients for the city's money changers

are Saudi citizens, the foreign labour force, and visitors. The Saudi citizens can be divided into two categories, those who go abroad for vacations, and those who go abroad for business purposes. When the summer vacation coincides with Ramadan, the money changing market becomes extremely active if compared to the other seasons. The other foreign labour force is active, throughout the year, because there is a high turnover of labourers. Visitors go to the city for either business purposes or to visit relatives, since tourism is strongly discouraged. In general the money changing business is now active throughout the year. Customer loyalty has been examined by Wilson⁽⁴⁰⁾ who noted that in some countries customers frequently go to a money changer who is a member of the same tribe, or religious sect. For example, in Bahrain, Shia Muslims always deal with Shia money changers, and Sunni, with their contemporaries. The same sectarian loyalty has been found amongst the Coptic Christians and Muslims of Cairo, and the Maronite Christians and Muslims of Beirut. Such loyalty, however, is not observable in Jeddah today and the only attraction for customers is the exchange rate. However, it has been found that some of the money changers have regular dealings with customers from a specific country, for example Egypt. This is because some particular money changers will offer a low commission rate and more facilities, such as a ready supply of Egyptian pounds and its denominations.⁽⁴¹⁾

Conclusion

It is clear that the importance of commerce and finance in the city of Jeddah have both grown and are growing in response to the rapid increase in population and in wealth. The shopping area of Jeddah is growing in terms of floor area, number and kinds of shops. This is primarily related to the increase of oil revenue, particularly since the oil boom of 1973, which has affected all areas of economic

activity in the city. This led to the flow of large numbers of foreign workers to meet growing demands for labour. Other related factors are the large investment by Saudis of their capital in trade, demands for goods, particularly luxury goods by Saudis and foreign communities living in the city, the growth in capacity of the port of Jeddah which is capable of rapidly supplying all kinds of commodities, government subsidies for most necessities and very low tariffs on other imports. Although modern shopping areas are appearing throughout the city, the traditional outlets are also expanding in various directions without any municipal control. In recent years, very modern shopping centres have been erected in several parts of the city, mainly the northern zone. The introduction of such new retail methods to the city of Jeddah can be related particularly to the increase in the number of foreign communities in the cities (see Chapter 3) on one hand and, on the other, the large number of Saudi citizens who travel abroad for business, education and vacations bringing in on their return not only a wider range of demands but also new and more profitable retailing methods. From the writer's experience some of the current big names in trade are young ex-students who have spent a few years in America or Europe.

Financial activity in Jeddah is great when compared to other cities and continues to play a major financial role in the country even after the transference of SAMA to Riyadh. This is because most banking activities are related to commerce, and Jeddah is still the commercial centre for the country. Money changers are a very important aspect of the financial life of the city because some of the money changers have larger turnovers than some banks. For example, the Al-Rajhi money changing group, which had hundreds of branches throughout the Kingdom, was allowed to change its operations to those of a bank, and immediately became one of the major banks in terms of total value of transactions.

Today their importance is no longer confined to the religious seasons, and they perform important functions throughout the year. The CBD still represents a major location for both banks and money changers.

The characteristics of a CBD are in many ways indicative of the nature of the related urban functions and there are some significant differences between Jeddah in this respect and the type of class CBD as, for example, found in New York. From all the survey data of commodity trading functions, retailing, wholesaling and warehousing functions, it is remarkable how the old heart of the city, which can be defined legitimately as the CBD, still has a mixed set of functions. In the classic model, one thinks mainly of very specialized high order functions. For example when it comes to financial functions, this is certainly true, but here in the CBD there is in fact a great range of relatively lower order services of various types in the heart of the CBD as well as scattered in other parts of the CBD (Bab Makkah and Bab Sharif). To some extent this is a result of trends which are not specifically the concern of this thesis, i.e. rapid responses to change in which land values and rent values are still not completely adjusted to the classic gravity model. So it is still possible to find small businesses which clearly are not capable of paying very high rentals on hypothetically very high-value land and this is, as noted earlier, a result of long-term rental contracts based on much earlier and lower values. Whether in fact new decontrol of rents introduced in 1982 will lead to more specialised zoning, it is difficult to tell, but it does indicate that Jeddah is not necessarily simply a classic Western type urban model in which it is assumed that, planning permitted, gravity-flow centric effects of land values will operate.

CHAPTER 4

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Group (IDSEG). University of Ottawa,pp.14-16.
- (33) Results of personal fieldwork survey 1982.
- (34) Henin, C. op.cit., p.5.
- (35) Results of personal fieldwork survey 1982.
- (36) Wilson, R. (1983) Banking & Finance in the Arab Middle East.
Macmillan, London, p.3.
- (37) Ibid,p.18.
- (38) Ibid,p.13.
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CHAPTER 5

THE INDUSTRIAL FUNCTION

Recently, industry has developed greatly throughout Saudi Arabia, and Jeddah has become an important industrial area. As a result, industry now constitutes a significant economic function in the city. This Chapter is devoted to a discussion of the manufacturing industry in all its aspects with, first, a general view of the development of industry in the Kingdom, its factors, trends, incentives and problems as background information to the industrial situation in Jeddah. The second part of this Chapter studies different aspects of the present state of industry in Jeddah; industrial structure, the major industries, labour, and the location and distribution of industries. An attempt also will be made to shed light on potential future progress.

Data limitation is again one of the main constraints to further studies. For instance, all four industrial censuses of 1962, 1971, 1976 and 1981 include only two indices to measure the degree of industrial development which has taken place; these are the numbers of establishments and of employees, both categorised by industrial type. Other important indices such as wages paid, value of output, value of input and value added are not available. In addition to this limitation other valuable data regarding labour is not available for example, a breakdown of age group, sex, employment structure and salary. Such a shortage of information makes any analysis very difficult. The writer has used the available data together with information gathered from field survey carried out by the author in 1982.

Industrial Development in Saudi Arabia

Industrial activity in Saudi Arabia before the discovery of oil was limited to small craft industries characterized by centuries-old techniques and displaying slow progress. They were limited in both

number and size, and were preponderantly the traditional handicraft industries including weaving, mat and basket weaving, pottery, gold and silverware, small ship building and leatherworking. Most of these products were seldom exported and depended upon local materials. Such industries were located largely in the main urban centres, such as Jeddah, Makkah, Riyadh and Dammam.

After the discovery of oil, the number of factories started to increase slowly, and new types of industries were introduced to the country. The industries introduced responded in the main to the increase of construction in the country, and most of these industries were still dependent upon local materials such as bricks, tiles and cement. The number and the type of these industries were still limited and in type were also very similar to the early growth industries which appear in most developing countries.

Prior to the launching of the First Development Plan in 1970 in the Kingdom as a whole, about 231 projects were licensed with a total capital of SR 241 million during the five-year period 1965-1970. The average size of capital invested per manufacturing unit licensed during this period was rather small - about one million Saudi Riyals.⁽¹⁾ The increasing importance of manufacturing industries in the economy can be seen by evaluating the three Five Year Development plans in the period 1970 to 1985. In the first Five Year Economic Plan 1970-1975 there was recommended the issuance of a general industrial policy for the Kingdom and the completion of the construction operations at the industrial estates in Jeddah, Riyadh and Dammam. The plan also provided guidelines to the private sector for various fresh investment opportunities, among which were the establishments of plants for cotton textiles, plumbing tools, batteries, canning vegetables, a plant for the production of medical tablets, and paper-product industries

in the Western Province. To the public sector, the plan allocated a total outlay of SR 1,098.5 million, while from the total project outlay, industry accounted for SR 776.7 million. As a result of the projected investment, the contribution of manufacturing industries was projected to increase from about SR 335 million at the beginning of the plan to SR 562 million at the end of the plan, implying an average annual growth rate of 13.5 per cent. In order to diversify the economy and to reduce its dependence on oil, the plan aimed at increasing the contribution of other productive sectors, especially agriculture and industry, to the national product. However, the amount allocated to these sectors was relatively very small, accounting for only 6.3 per cent of the total planned outlay and 6.9 per cent of the project outlay. Industry (including mining and power) received only 27.7 per cent and 4.2 per cent of the total project outlays respectively. ⁽²⁾ This can be attributed to the fact that this plan was the first attempt to control industry and the government lacked experience, together with the fact that the revenue from oil was not yet large enough to allow for higher public spending on industry. But the sharp increase in the mid 1970's removed the financial constraint on industrial development. Money was available to finance any project thought desirable. The objectives for the non-oil manufacturing sector were ⁽³⁾

- 1) to increase the economy's capacity to produce at competitive cost, a wide range of products for domestic as well as for export markets.
- 2) exploiting industrially the substantial comparative advantages arising from low-cost energy, raw materials from hydrocarbon-related industries, minerals, and agricultural and fishing resources.
- 3) expanding the country's access to modern technology.

- 4) encouraging further utilization of capacity in the private manufacturing sector.
- 5) developing a regionally balanced industrial sector.
- 6) raising productivity through closer attention to the optimal size of plants.
- 7) reducing dependence on expatriate workers by national skill-creation through the development of general and technical education and on-the-job training of citizens.
- 8) promoting interlinkage among industries.

After 1974, one year before the launching of the Second Development Plan, the investment climate and the expectations of the investors improved considerably in the Kingdom. With the increase in national income, large investable funds became available both at national as well as individual levels. The Government introduced a number of incentive measures to attract the private sector into the field of manufacturing industries, including :⁽⁴⁾

- 1) Loans on favourable terms from the Saudi Industrial Development Fund (SIDF) established in 1974 to finance new industrial ventures on concessionary terms. Medium to long-term loans are granted to companies. During the period 1974-1975 and 1978-1979 the Fund approved 506 industrial loans involving a total amount of SR 5,416 million.
- 2) Tariff exemption on imported equipment and materials.
- 3) Selective tariff protection from imported products.
- 4) Tax incentives.
- 5) Assistance in studies and operation.
- 6) Provision of low cost utilities and fuels.

- 7) Provision of infrastructures, including industrial estates.
- 8) Training subsidies for manpower.
- 9) Adoption of Government procurement policies giving preference to Saudi producers over imports.

The private sector responded admirably to the incentive measures introduced by the Government, as can be seen from the rate of growth, in number and size of investment projects licensed since 1974. During the last two years of the First Development Plan as many as 271 manufacturing projects were granted licenses with a total invested capital of about SR 2,721 million. (5)

In 1975 a new economic plan for the years 1975-1980 was introduced. Two fundamental guidelines were carefully delineated in the country's second Five Year Plan. The first was the construction of large factories, e.g. petrochemical, petroleum refinery, glass and aluminium complex. Secondly, the maximum utilization of the Kingdom's mineral resources. (6) About half of the financial resources budgeted for economic-resource development, SR 44,280.6 million, were allocated to the expansion of the manufacturing sector. (7) While this plan emphasised development in the general industrial sector, it paid particular attention to chemicals industries, oil and gas projects and electricity power. The Royal Commission for the industrial cities of Jubail and Yanbu was established in this plan period. The plan also emphasized the necessity of expanding the country's industrialization effort to cover industries which are important from the point of view of national security and overall welfare of the people. The plan also attempted to correct regional imbalance by investing in regional industries so as to expand local employment and incomes. Total public expenditure on industry doubled during the plan period, from SR 3,303.4 million in 1975 to 6,753.3 in 1980. Finally one of the main goals of the plan

was to diversify through the establishment of various industries such as canning, minerals, glass, lumber, marble and synthetics.⁽⁸⁾

The industrialization programme is even more important in the Third Development Plan for 1980-1985. While the first and second plans were characterized by the building of infrastructure, the Third Plan laid more emphasis on the directly productive sectors. This has implied the creation of heavy industry through public sector ventures, other areas of industrial production being reserved for private sector initiatives.

Of the Third Plan's total projected development expenditure of SR782.8b, 37.3 per cent ⁽⁹⁾ was allocated to industry including both public sector investment and assistance to, and incentives for, the private sector. The Government agency for heavy industrial development, SABIC (Saudi Arabian Basic Industries Corporation) is responsible for more than a dozen major manufacturing plants in the Kingdom but only one of these is located at Jeddah. The city has therefore not apparently benefited greatly from the recent flood of state investment in industry. Much more important have been the private sector ventures. This imbalance, together with other aspects of industrial activity in Jeddah, is considered later in this Chapter.

Industrial Development in Jeddah

Many factors have stimulated industrial growth in Jeddah, the most important being

1. Jeddah as the main commercial port in the Kingdom is a major transshipment and break of bulk point for imported raw materials and semi-processed goods as well as finished products.
2. One of the most important factors attracting manufacturing to large cities is the accessibility to local potential customers. ⁽¹⁰⁾

Jeddah is not only the largest city in the Western Region, and the second largest city in the Kingdom, but in addition it is located close to the other urban markets in the Western Region and, as noted in Chapters 4 and 9 has strong trading links with them.

3. The range of raw materials for processing found in the region is limited but mineral resources such as limestone, marble, and clay are present (see Chapter 1). Whilst Jeddah does not have the hydrocarbon wealth of the Eastern province, regional resources provide the fundamental basis for the manufacturing of building materials such as tiles, cement, bricks, stone and gypsum goods. This is significant because building material and cement-producing industries still attract most industrial private investment. Thus as recently as 1401/1402 AH, those two sectors obtained 50 per cent of the loans made by the Saudi Industrial Investment Fund. (11)

4. The physical infrastructure available in Jeddah encourages industry to develop. This includes handling and storage facilities at the main airport and seaport which are superior to those found at any other centre in the Kingdom. Furthermore, since Jeddah has already developed as the communication centre and node for the whole Western Region and is one of three major nodes on the transpeninsular national route exist, Jeddah-Riyadh-Dammam, physical and organizational transport facilities are well developed. Electricity supplies are amply available and being expanded. This well-developed communication centre and availability of electricity are two factors which attract industries to Jeddah.

5. Other even more important infrastructural facilities for industry are particularly well-developed as noted in Chapter 4. These include banking and financial institutions and large commercial and mercantile organizations.

6. In Jeddah, particularly in the southern part of the city, there are available large areas of unutilised state-owned land which could be used for industrial purposes.

7. No significant terrain constraints stand against any industrial expansion (see Chapter 1) and industrial services (water, electricity, sewers etc.) can be installed at lower cost than at Makkah for example.

However, despite these potentially encouraging factors for industrialization, the industrial sector in Jeddah remained very limited until 1947 and showed little progress in type or scale up to the early 1970's when it began to expand as a consequence of the general development process in the Kingdom as earlier described.

The 1962/63 census included data not only on occupations and employment but also a section on business and industrial establishments. These findings however were repudiated by the Government. The total number of industrial firms recorded at that time was 1,332 employing 5,071 workers. A comparison of these figures with those of the other industrial censuses of 1971, 1976 and 1981 suggest that the number of industrial firms recorded in 1962 is reasonably compatible with subsequent growth trends. About 60.2 per cent of industrial firms in 1962 were workshops and repair shops, 39.2 per cent of these engaged in the repair of motor vehicles. Manpower structure data show that 42.3 per cent of persons engaged were nationals (Saudi) and 2,921 or 57.6 per cent were expatriates. Industrial establishments were divided into two categories; establishments with less than 10 workers and the large units. Small establishments dominated the industrial structure of 1962 and in number represented 95.5 per cent of the total. The industrial structure, both of Jeddah and of Saudi Arabia as a whole, was of course backward compared to the international scale at that time, and most so-called industries were essential handicrafts.

In 1971 a new industrial census was published by the Central Department of Statistics.⁽¹²⁾ This census is best used as the base year for studying industrial development instead of 1962, since it was not repudiated by the Government. However, accepting all the possible deficiencies in data, we can derive some understanding of early trends by making comparison between the industrial status at 1962 and that in 1971. The number of establishments in Jeddah increased from 1,332 to 1,644, an increase of 23.4 per cent or an annual growth rate of 2.4 per cent. The number of workers increased from 5,071 to 7,887, an increase of 56 per cent, i.e. an annual growth rate of 5 per cent.

The industrial development that took place in Jeddah during the period 1962-1971 can be attributed to several factors. In national terms oil production increased from 555,055,388 barrels in 1962 to 1,641,615,332 barrels in 1971, which produced a vast increase in oil revenue and consequent growth conditions in the industrial sector as well as other sectors. Locally, some important infrastructural facilities were set up at Jeddah such as the oil refinery, a water desalination plant, whilst transporation was greatly improved. We also know that construction activity began to rise rapidly with consequent effects on the demand for some manufactured products (see Chapter 7). However, industrial development until 1973 was still dominated by establishments engaged in services, trade and commerce. In general, industry was characterized by the small number of employees per establishment and a high percentage of manufacturing establishments employing only one to four persons, 94 per cent of the total. This is a result primarily of three factors, infancy of industrial establishment, small and scattered markets, and as a consequence of the shortage of manpower the preferential use in many industries of labour-saving equipment - in fact, the average number of workers per establishment increased from 3.8 in 1962 to

4.7 in 1971. Most of the small establishments were essentially hand-icraft shops and accounted for nearly 60 per cent of employment in all the manufacturing sectors. Most of these firms were repair shops (working with vehicles, electric machines, and motorcycles), carpenters (making doors, windows, panels and tables) and smiths (working with gold, silver and iron).

In general, by 1971 the major difficulties facing industry were the same as they had been a decade earlier: (13)

1. Insufficient clarity in industrial policy and insufficiency of legislation concerning incentives, commercial codes and contractual relations.
2. Delays in visa formalities and an unfamiliar working environment for foreign workers.
3. Slowness in government departments and the proliferation of agencies dealing with industrial establishments.
4. Costliness of imported raw materials and irregularity in their flow.
5. The large relative volume of capital required generally in order to establish competitiveness with foreign manufacturers. On the one hand there was little tariff or other protection for domestic industry, on the other a preference for imported goods in local markets.
6. The inadequacy of certain public facilities such as water, electricity and means of communication.

These factors affected operations in the manufacturing sector in different ways. Whereas most of the factors needed remedial governmental action, some of them, such as lack of support facilities, inefficient management and planning, stemming as they did from the infancy of industrialization in the Kingdom, could be expected to improve with

the industrial growth process and experience over a period of time. However, the situation in Jeddah relative to other industrial cities in the Kingdom can be seen from the survey carried out by Techno in 1973, ⁽¹⁴⁾ shortly before the oil boom. In this report Jeddah was identified as the industrial metropolis of the Kingdom holding pride of place with 32 per cent of all industrial establishments. Riyadh, the capital city, emerged in second place with 28 per cent of the units, whilst Makkah and Dammam were almost equal with 12 per cent and 11 per cent respectively. Industrial employment data produce a slightly different pattern, although still in Jeddah's favour. The share of Jeddah and Dammam here was greater than in the numbers of units: Riyadh and Makkah less.

In the light of the national development trends noted earlier, 1973 can be considered as a threshold year between two periods, slow progress in the first and great and rapidly accelerating progress in the second stage, this being true nationally as in Jeddah. Here, the 1976 industrial census is first studied, ⁽¹⁵⁾ and compared with 1971, and later, the 1981 industrial census is examined to show the most recent trends.

Industrial Development 1971 - 1976

The industrial developments which took place during this period can be illustrated by comparing Table 5.1 and Table 5.2. First, the number of establishments increased by 35 per cent representing an annual growth rate of 6.2 per cent, compared with 26 per cent and 4.7 per cent in the whole Western Region*, which means that industrial growth in Jeddah was very rapid compared to that of the Western Region in general. Secondly, the number of workers increased by 71.8 per cent representing an annual growth rate of 11.4 per cent as opposed to only 60.7 per cent with an annual growth rate of 10 per cent in the Western

* Data for the Kingdom are not available.

Table 5.1 Industrial Structure in Jeddah in 1971

Industry	No. of Establish-ments	No. of Employees	Average workers per factory
Foodstuffs, beverages and tobacco	373	2,081	10
Textiles, ready-made clothes and leather	476	932	2
Wood products and furniture	221	759	3
Paper, printing and publishing	34	486	14
Chemicals, petroleum, plastic products	11	289	26
Bricks, blocks, cement, glass	165	1,970	12
Basic metal industries	4	6	1.5
Manufactured metal products, machinery and equipment	270	1,219	5
Other manufacture and industries	90	145	2
Grand Total	1,644	7,887	4.7

Source : Central Department of Statistics, 1971.

Table 5.2

Industrial Structure in Jeddah in 1976

Industry	No. of Establish-ments	No. of Employees	Average workers per factory
Foodstuffs, beverages and tobacco	186	1,994	11
Textiles, ready-made clothes and leather	676	1,467	2
Wood products and furniture	423	1,714	4
Paper, printing and publishing	42	1,570	37
Chemicals, petroleum, plastic products	301	1,915	6
Bricks, blocks, cement, glass	160	1,908	12
Basic metal industries	62	226	4
Manufactured metal products, machinery and equipment	257	2,328	9
Other manufacture and industries	113	431	4
Grand Total	2,220	13,553	6

Source : Central Department of Statistics, 1976.

Region. This great increase in the number of workers in Jeddah can be attributed to the increase in the number of large establishments which took place during that period. Large establishments increased from 115 or 6.9 per cent of the total in 1971 to 199 or 8.9 per cent in 1976. These large establishments employed 4,207 workers, 53.3 per cent of the total or 36.5 workers per establishment in 1971, and 5,703 workers, 42 per cent or 28.6 workers per establishment in 1976. The strange decrease in the percentage of workers in large establishments in 1976 compared to 1971 is not related to an actual decrease in the number of workers themselves, but because for some industries, data on workers were not published, to avoid the identification of a small number of large individual establishments. The Royal Decree of 7-12-1379-1959 restricts the publication of data for individual companies.⁽¹⁶⁾

As noted in Tables 5.1 and 5.2 textiles, ready-made clothes and leather continued to be the most important until 1976 in terms of the number of establishments which represents 28.9 per cent of the total in 1971, and 30.4 per cent of the total in 1976. However, this industry was only fourth in terms of workers, forming 11.8 per cent of the total in 1971, and was seventh, forming 10.8 per cent of the total in 1976. The large number of establishments in this industry can be attributed to the fact that most of the above mentioned industries consisted mainly of small firms such as tailors, shoe repairers and shoe makers. The number of establishments involved in the chemical industry increased and the number of workers increased from 11 in 1971 to 301 in 1976 and from 289 to 1,908 respectively. This great increase can be attributed partly to the establishment of two large chemical factories employing a large number of workers. These were the lubricating oil factory and chemical detergent factory. In addition to this, a number of small to medium plastic factories were established. On the other hand the

decrease of the foodstuff industry in terms of establishments and workers does not mean a decrease in its activities during these years, but rather must be related to the decrease in the number of small establishments which have been replaced by new larger units. This was especially relevant to bakeries and both traditional and modern confectionery firms. This trend was very similar to that which was beginning to appear in the size and type of retail outlets (see Chapter 4). Paper, printing and manufactured metal products industries show the same trend, where the number of establishments decreased and the number of workers increased. This can all be attributed to the replacement of small firms by large. The manufactured metal products industry was the most important in terms of number of employees, 15.4 per cent and 17.2 per cent of the total in 1971 and 1976 respectively.

Industrial Development 1976-1981

This was the most important period for industrial development not only in Jeddah but in the whole country. This period coincides with the launching of the second Five Year Plan, the objectives of which were summarised earlier. By the end of this period Jeddah appeared as one of the most important industrial cities in Saudi Arabia, with many large modern factories set up to produce a variety of commodities.

To measure the size of development which took place during this period, a general comparison between Table 5.2 and 5.3 is useful. First, the number of establishments increased greatly from 2,220 in 1976 to 3,820 in 1981, ⁽¹⁷⁾ a 72 per cent overall increase and an annual growth rate of 11.5 per cent. This compares with a 72.7 per cent increase or annual growth rate of 11.5 per cent for the rest of the Kingdom. This phenomenon can be attributed to the increase in government expenditure on industry. For example,

Table 5.3 Industrial Structure in Jeddah in 1981*

Industry	No. of Establish-ments	No. of Employees	Average workers per factory
Foodstuffs, beverages and tobacco	267	5,072	19
Textiles, ready-made clothes and leather	1,299	3,476	2
Wood products and furniture	344	2,455	7
Paper, printing and publishing	164	2,852	17
Chemicals, petroleum, plastic products	54	2,094	38
Bricks, blocks, cement, glass	387	7,519	19
Basic metal industries	85	771	9
Manufactured metal products, machinery and equipment	1,121	11,200	10
Other manufacture and industries	99	323	3
Grand Total	3,820	35,762	9

Source: Ministry of Finance and National Economy. Central Department of Statistics. Summary Results Census of Private Establishments 1981, p.48.

* This table includes the industrial structure of small and large establishments.

industrial loans by SIDF increased from SR 35 million in 1974/75 to SR 6,490 million in 1979/1980. (18) In Jeddah the number of workers increased greatly by 164 per cent in just five years, compared with 130.7 per cent in Saudi Arabia as a whole. The annual growth rate was 21.4 per cent in Jeddah and 18.2 per cent in Saudi Arabia. This great increase in the number of workers, of course, was a result of the increase in the number of large factories, both in the private and public sector.

In the light of the facts, it is clear that industrial development during 1976-1981 increased greatly in terms of the number of establishments and the number of workers. Compared with the previous period one can see that great growth took place both in Jeddah and in the Kingdom.

Several important changes took place in the city's industrial structure during the period 1976-1981 as shown in Tables 5.2 and 5.3. During this period particularly great changes occurred in the textile industry, ready made clothes and leather industries. This can be attributed to the building of large factories producing textiles and leather on the one hand and on the other hand the licensing of a large number of small establishments such as footwear makers and tailors producing a great variety of clothes, mainly traditional types thuob. The number of establishments increased by 72 per cent during the period 1976-1981 but the number of workers increased by 165.8 per cent for the same period.

The rising importance of the manufactured metal products industries increase is shown by the 11.5 per cent of total establishments in 1976 to 29.3 per cent in 1981, whilst the number of workers rose from 17 per cent of the total in 1976 to 31.3 per cent in 1981. The increase in the number of establishments and workers can be attributed to the fact that 70 per cent of all large factories in this industry were built during this period. About 32 per cent of these

large factories were engaged in industries which were novel to Jeddah such as electrical appliances, electrical water heaters and solar energy water heaters. Other important growth occurred in the non-metallic mineral products industry where a number of factories making bricks, blocks, prefabricated units and other building materials began to produce. This sector's proportional importance to total establishments increased from 7.2 per cent in 1976 to 10.2 per cent in 1981, and workers from 14 per cent in 1976 to 21 per cent in 1981. The sharp increase in this sector, 142 per cent in establishments and 294 per cent in workers over 1976 was because of the rapidly rising demand for construction materials. This industrial group was important since it alone relied on domestic raw materials.

In the foodstuffs industry the numbers of establishments and workers increased from 186 and 1,994 in 1976 to 267 and 5,072 in 1981 respectively. The larger number of workers is due to the increase in the number of large factories employing many workers. Both the establishments and the workers in the paper industry increased from 42 and 1,570 in 1976 to 164 and 2,852 in 1982 due to the expansion of some old factories and the introduction of new factories. It is interesting to note that the number of establishments in the chemical industry declined from 301 in 1976 to 54 in 1981. On the other hand the number of workers increased from 1,915 in 1976 to 2,094 in 1981. This can be attributed to the expansion of the Jeddah oil refinery, the building of large factories and the closure of some of the small establishments, because small establishments cannot compete with the new modern ones, and they failed to continue in operation. The same situation occurred in wood products and the furniture industry where the number of establishments decreased from 423 in 1976 to 344 in 1981, and the number of workers increased from 1,714 in 1976 to 2,455 in 1981, due to the closure of some of these establishments, particularly carpenters

and related small workshops which have recently suffered from several problems relating to marketing, shortage of money, lack of experience, work conditions and competition from large establishments which have the strength to exist and to expand.

Finally Table 5.4 illustrates some additional aspects of Jeddah as an industrial city, utilising published data and 1982 fieldwork findings. In general, Jeddah's share, both of the number of establishments and of industrial financial investment in the Kingdom is high. 21 per cent of the licensed establishments in the Kingdom are located in Jeddah. It is interesting to note that 25 per cent of the total manufactured metal products were also located in Jeddah, this is due, partly, to the presence of the only steel-making plant in the Kingdom. In addition, several large steel forming and fabrication factories employing large numbers of workers producing a variety of steel commodities have been licensed in Jeddah.

Non metallic mineral industries (bricks, blocks, cement, glass and prefabricated units) are in a different situation where the total financial investment occupies the foremost place but the number of establishments comes last among other industries. This can be attributed to the expansion of the only cement factory in the Western Region, the closure of small bricks and blocks establishments which were replaced by larger ones, and the introduction of new types of building materials factories, such as large pre-cast units and ready-mixed concrete. This trend is associated with the start-up of larger but a smaller number of establishments and high financial investment.

The other manufacturing industries group occupy the foremost place in financing, 56 per cent of total financing of this industry going to Jeddah whilst 22 per cent of the total numbers of plants are in Jeddah. The reason behind this phenomenon is that this group includes a variety of

Table 5.4: The Percentage of Jeddah to the Kingdom in the Number and Total Financing of Industrial Firms Licensed Under Regulations For the Protection and Encouragement of National Industries and Foreign Capital Investment Regulations up to the end of 1981

Industries	Total investment in the Kingdom		Total investment in Jeddah		Percentage Jeddah to the Kingdom %	
	No. of Est-ablishments	Total financing (SR million)	No. of Est-ablishments	Total financing (SR million)	in no. of estab-lishments	Total of financing (SR million)
Foodstuffs, beverages and Tobacco	424	7,354	91	2,035	22	28
Textiles, ready-made clothes and leather	76	1,139	19	337	25	30
Wood products and furniture	80	1,397	18	359	25	26
Paper,printing and publishing	150	1,952	54	414	23	21
Chemicals, petroleum, plastic products	404	54,288	98	2,282	24	4
Bricks, blocks, cement,glass	569	2,649	69	1,037	12	39
Manufactured metal products	370	8,417	91	1,547	25	18
Machinery and equipment	144	2,645	37	679	26	26
Other manufacturing in-dustries	198	2,758	44	1,550	22	56
Grand Total	2,414	95,179	501	10,220	21	11

Source : Jeddah Chamber of Commerce and Industry. Directory of National Industries in Jeddah 1982.

: Central Department of Statistics.

: Fieldwork 1982-83.

types of manufacturing, each with a small number of new large plants requiring very large investment blocks, such as the National Automobile industry and other related activities. Other important elements include textiles, where 25 per cent of the total establishments in this sector is located in Jeddah with a financial share of 30 per cent. Wood products and furniture industries in the city share, along with other industries, a disproportionate national importance, 24 per cent of total establishments in this sector being in Jeddah with a financing share of 26 per cent. This can be attributed to the construction of large furniture factories which require a big investment.

The chemical industry has a different situation, where the number of establishments is 24 per cent of the national total but only has 4 per cent of the total finance. A high percentage of establishments can be related mainly to the high number of small firms, particularly plastics factories, 25 per cent of the national total being located in Jeddah. On the other hand this type of industry does not require large investment as it is in basic petrochemicals. It is worthwhile noting that 80.5 per cent of the total finance in this sector is to the chemical and petroleum industry.

The low Jeddah percentage of the total finance in chemicals nationally can be related to Government policy which has allocated all the prime industries such as chemicals and petroleum to the Yanbu and Jubail industrial complex.

Types of Industry 1982

Using the earlier definition of a large industry as one employing 10 or more workers, we see that the numbers of such establishments changed from 199 or 8.9 per cent of the total in 1976 to 297 or 7.8 per cent of the total in 1981-82. The data for 1981-82 are not, however, strictly comparable with those of 1976, since they were obtained from the results of fieldwork carried out by the author in both 1981 and 1982. The 1981 census cannot be used for this type of analysis since it only stated

the total number of establishments without any classification between large and small (see Table 5.3).

Large Establishments

A. Public Sector

The public sector represents a small proportion of the total of large establishments in Jeddah, but when it comes to the number of employees the picture is different. Unfortunately, a comparison of the public sector with the private sector in terms of capital investment is not possible because capital investment data for the private sector as a whole is not available. However, the proportion of workers in the public sector is greater compared to the ratio of the number of establishments. For example, in 1976 there were four public factories, a proportion of 2 per cent of the total of large establishments but these had 21.5 per cent of the total workers in large establishments. In 1981 the proportion of public sector establishments decreased to 0.8 per cent of the total large establishments. This is due to the increase in the number of large establishments in the private sector since the 1976 census, mainly due to governmental encouragement through the SIDA. At the same time, the government assumed responsibility for direct investment in some types of basic or heavy industries to which private investment was not attracted.

It is normal in developing countries to find that in some basic industries the scale of unit-block investment is beyond either the resources available to private investors, or at least their preparedness to venture risk capital. Thus, although Saudi Arabia is committed to a private enterprise economic system, the state has perceived the necessity for it to fill the gap. Moreover, whether the planning ideology is that of socialist Algeria or Islamic individualism, as in Saudi Arabia and the Gulf states, the complex technology, as well as the scale of investment required in late twentieth century industries in the hydrocarbon as well

other heavy industries appropriate to countries with resource endowments similar to those of Saudi Arabia has also discouraged private investment.

For these reasons government participation in major public sector projects was essential if these industrial fields were to be developed. Since the 1960's Saudi Arabian government, moreover, decided to adopt a positive and direct rather than a passive *laissez faire* role in industrial development.

During the 1960's and early 1970's the effect on Jeddah of such direct national state intervention took the form of investment in three particular types of basic industry in the city. Each of these was justified in general terms as supplying basic requirements of the local market for finished or semi-finished goods. More recently the approach has been replaced by a policy of state investment in production complexes on "greenfield" sites, the industries being strongly orientated towards export markets e.g. the Yanbu and Jubail industrial cities. The criteria for the choice of industries by type and of location, and the involvement of foreign partners to utilise their technologies and direct access to their marketing channels, has radically changed the situation of industrialisation in existing urban centres (see the conclusion to this chapter). ⁽¹⁹⁾ The public sector industries now present in Jeddah therefore represent a legacy from earlier national policies which have now been abandoned; this theme is developed later. A summary review of these industries follows.

a. Jeddah Oil Refinery

Before the refinery was constructed, local demand for some oil products, mainly petrol, was met by a products distribution plant consisting in 1966 of 17 storage tanks with a total capacity of about 865,000 barrels of refined petrol. By 1968 an oil refinery with an

output capacity of 12,000 b/d was constructed to meet growing local demand and some extra facilities and installations such as pipelines and liquified storage tanks, were added. At the end of 1974, four additional tank truck loading platforms were completed, three of which handle refined products in such a way as to allow the filling of one truck with more than one kind of product from the same platform. The fourth platform handles unrefined materials such as asphalt and other heavy products. A third offshore platform capable of receiving tankers of over 40,000 tons has been constructed. (20)

Production has been increased to meet the growth of local demand and refinery capacity has built up progressively. In 1974 an additional unit was built to handle 33,000 b/d crude oil and in 1978 further additional capacity was installed and production increased to 69,000 barrels per stream day (BPSD) ⁽²¹⁾ with product proportions as follows: 34.5 per cent diesel; 25 per cent fuel oil, 13.9 per cent asphalt, 13.3 per cent regular mogas, 10.1 per cent naphta and 5.0 per cent LPG.

By 1980 the capacity of the oil refinery was again raised to 99,500 barrels per stream day, an increase of 44.2 per cent over 1978. ⁽²²⁾ This great increase in just two years reflected the size of development which took place in all economic sectors served by the Jeddah refinery.

This accelerating and large demand has led to the examination of the possibility of expanding the existing refinery to a capacity of 240,000 BPSD. This additional capacity requirement is based on the estimated 1982 consumption of petroleum products in the Western Region of the Kingdom. The expanded refinery would process 215,000 BPSD of Arabian light crude oil and 25,000 BPSD of Arabian heavy crude oil.

Jeddah oil refinery in the early 1980's was the second largest

in terms of product in the Kingdom as shown in Table 5.5 producing 10.2 per cent in 1980 and 9.7 per cent in 1981 of the national total. This proportion may be low when compared with Ras Tanura refinery with 83 per cent in 1980 and 79 per cent in 1981, but Ras Tanura refinery was first designed in the 1940's to meet both domestic and export demand.

The recent policy of building refineries to meet regional demand led by 1984 to the capacity of Riyadh refinery, 120,000 b/d, outstripping that of Jeddah, whilst today a new generation of large export refineries is being constructed at Jubail on the Gulf and at Yanbu and Rabigh on the Red Sea. These new refinery projects are relevant here because they are being built at new industrial complexes, away from old-established centres such as Jeddah.

Table 5.5 Production of Refined products in Saudi Arabia, by location
in thousand U.S. Barrels 1975-1981

	1975	1976	1977	1978	1979	1980	1981
Ras Tanura	180,638	223,699	225,403	232,749	248,215	251,845	240,037
Jeddah	6,650	9,262	11,545	21,627	30,119	30,917	29,447
Riyadh	3,195	3,366	5,514	5,345	7,380	5,397	24,315
Mia Saud	13,363	10,985	13,412	13,795	10,453	7,298	5,979
Ras al-Khafji	6,989	10,150	11,100	10,044	8,568	6,837	4,722
Total	210,835	257,462	266,974	283,560	304,735	302,394	304,500
Jeddah production as % of national total	3.3	3.4	4.3	7.6	9.9	10.2	9.7

Source: Petroleum Statistical Bulletin, 1981 pp.23-28.

The total number of employees at the Jeddah refinery increased from 526 employees in 1974 to 1880 employees in 1981. (23) The percentage of Saudi employees to non-Saudi, 80 per cent in 1981 is very large if compared to other industrial establishments, particularly private establishments as appears in the following section.

b. The Petromin Lubricating Oil Company (LUBEREF)

The Petromin Lubricating Oil Company was set up in 1968 to undertake all activities relating to the refining, processing, manufacturing, blending, transporting and marketing of lubricating oils and other related products. It is owned jointly by PETROMIN (71%) and Mobil oil investment (29%).

The company started its activities with the construction of a plant in Jeddah - the first of its kind in the Kingdom to process and blend crude oils and pack them in barrels of 55 US gallons and in tins of one Imperial gallon and of $\frac{1}{4}$ US gallon. The company produces all kinds of gasoline and diesel engine lubricating oil of all grades, gearbox oils of 90° and 140° and diesel oil for turbines. The establishment was designed to meet the increasing requirements for these consumer products in all parts of the Kingdom. (24)

Construction of the lubricating oil blending plant was completed in August 1971. It comprises blending and storage tanks, a factory for reconditioning barrels and a sea-going barge for the storage and transfer of stock oils from tankers to the pipeline inlet. Production capacity in the first year totalled 50,000 barrels of mixed products; by 1973 the production stepped up to 60,000 barrels. In 1976 production was again increased to 160,000 barrels, whilst by 1980 the single shift capacity of the blending plant was 500,000 barrels per year, and is already working significantly above capacity with 788,536 barrels produced in 1981. This will be enlarged to process one million b/y in the near future.

The strategy behind the expansion is two-fold. First the base stock production has outstripped the blending capacity necessary for increasingly specialised products and therefore about one-third of base stock is exported. The expansion of blending capacity (in type and volume capacity) will correct this imbalance. Secondly, the organisation will also therefore be able to meet local demand for both its own and other firms' brands of blended products.⁽²⁵⁾ The finished products are sold either directly to the wholesalers and retailers in the city and region, or to PETMARK for sale in other parts of the Kingdom.

The lubricating oil factory is located in the Petromin Industrial Estate close to Jeddah port. The transport of crude oil input and the output of products is the responsibility of PETMARK (PETROMIN MARKETING DEPARTMENT) which has a large national network of 15 bulk plants and two products' pipelines and a total storage capacity of about 4,320,000 barrels since June 1977. Marine transport is used both for the transport of crude oil from the Eastern region to Jeddah oil refinery and for products' distribution. The capacity of the tankers moving between Ras Tanura and Jeddah is up to 30,000 dwt. The products are either stored in Jeddah for further shipment, by barge to Jizan and other ports, or for inland distribution by road. PETMARK has its own fleet of road tankers and trucks which supply petroleum products to its bulk plants and airport fuelling units. Since this fleet has relatively limited capacity private transport handles the balance of truck deliveries. Private transport also handles the delivery of products to the end users, since PETMARK does not handle products downstream of the bulk plants. ⁽²⁶⁾

C. Basic Metal Industry

In this sector there is only one establishment, the Jeddah Steel Rolling Mill; this, the only steel factory in the Kingdom commenced production in 1967. PETROMIN gave priority to the creation of steel and iron industry first in Jeddah because of the long-term potential of the huge iron ore deposits found in the Arabian shield region (see Chapter 1) together with the large local demand for steel products and Jeddah's import function for the Kingdom. The construction of the Steel Rolling Mill in Jeddah was regarded as the first step towards the establishment of an integrated iron and steel industry and related industries, even before the Saudi Basic Industries Corporation was set up in 1976.

The mining of regionally available iron ores was postponed, partly because their relatively low iron content and the presence of chemical impurities made viable exploitation technically difficult and of high cost, and partly because of the prior need to build a suitable transport infrastructure. Since the main local demand for steel products during the late 1960's and 1970's was for construction materials, the first phase was one of the importation of steel billets for forming into bars, angles and sheets. The Steel Rolling Mill was originally designed to supply the national market as well as that of some neighbouring states, since the consumption of such materials was continuously increasing because of the rapid development of this area.

Initial design capacity was 45,000 tons a year on the basis of a 24-hour stream day; but the factory operated on only one shift which made the maximum capacity 15,000 tons in 1974 (Table 5.6).

Table 5.6 Steel Annual Production 1967 - 1982

Year	Production (in tons)
1967	4,365
1968	7,000
1969	6,740
1970	8,494
1971	10,259
1972	10,078
1973	13,000
1974	15,000
1975	12,649
1976	81,962
1977	9,339
1978	-
1979	-
1980	65,000
1981	65,000
1982	100,809

Source: Petromin Hand Book 1962-77, Steel Factory : personal communication, 1983.

During the mid-1970's, as a national policy for heavy industry was developed, SABIC was established in 1976, and Jubail was chosen as the location for major new investment in iron and steel making. The new company, Hadeed was set up as a Sabic/Korf-Stahl joint venture in 1979, and the Jeddah steel mill was merged with Hadeed. Sponge iron and steel billet making will be concentrated at Jubail, and the expanded Jeddah plant, closed during 1979 and 1980 during replanning, which now has a 140,000 tonne annual capacity, will, for the near future at least, continue to produce steel forms. In 1982 output totalled 100,809 tonnes. No data concerning employment is available after 1975 when the plant employed about 280 workers. Given the automated nature of the refurbished mill it is likely that the labour force has remained more or less constant.

D. Grain Silos and Flour Mills

There were dual primary objectives behind the construction of grain silos and flour mills; to build flour mills in the grain production areas and secondly to build mills at centres of population concentration and demand. Jeddah's objective falls in the second category where there is a great demand in the city itself and from other urban areas in the Western Region. Other objectives were to develop facilities to encourage agricultural production in the Kingdom, and to build up reserves of flour for local consumption (to last for six months during critical periods). The Jeddah grain silos and flour mill was established and commenced production in 1979. Production increased from 2,128,562 sacks of flour in 1979-1980 to 3,232,059 in 1980-81, an increase of 51.8 per cent over 1979-81. Production again increased in 1981-82 to 4,682,589 or an increase of 45 per cent of the 1980-81 figure (see Table 5.7). This was in response to the rapidly growing demand in Jeddah itself and in other areas. The market area supplied from the Jeddah plant is indicated in Table 5.7. At the same time grain purchase price policy and consumer subsidies have encouraged the growth of supplies to, and demand from, the mills. The Grain Silos and Flour Mills Organisation, a national agency, pays local producers five times more for local grain (SR 3.5 per kg) than it pays for imported grain, the objective being to increase the local production of grain. In addition, the government pays subsidies on both imported and locally produced flour and bran. Tables 5.8 and 5.9 illustrate these subsidy rates and show that by 1980-1981 the subsidy on local flour was half that on imported flour.

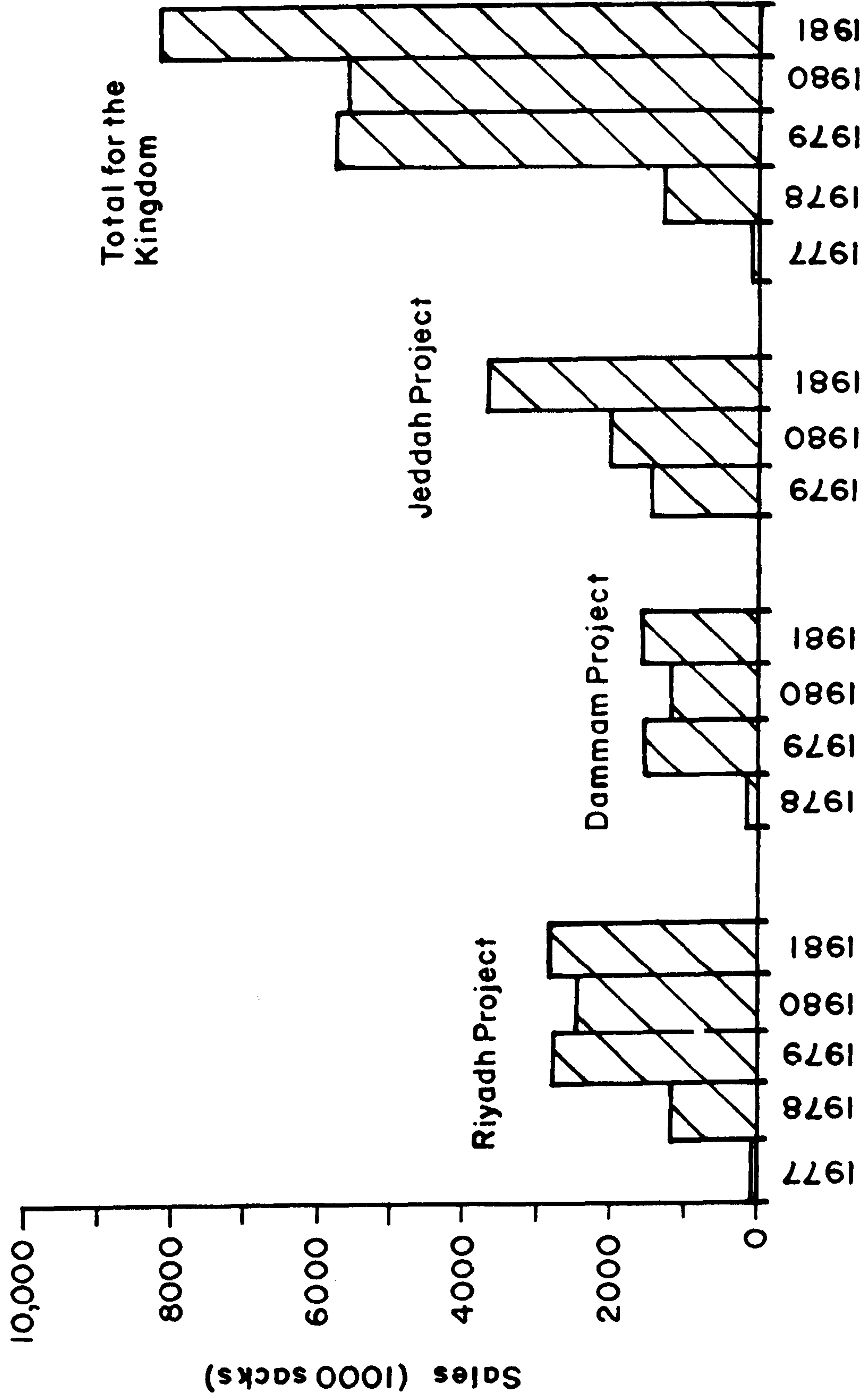
In 1981 50.4 per cent of the total production of flour in the Kingdom was produced in Jeddah (see Fig. 5.1), replacing Riyadh as the biggest producer.

Table 5.7 **Flour Sales in Jeddah and other Urban Centres 1979-1981**
(in sack)

Location	Total of 1979-1980	Total of 1980-81	Total of 1981-82	Percentage 1981-82 to 1979-1980	Percentage 1981-82 to 1980-81
Jeddah	928,463	1,441,340	1,841,607	98	28
Al-Medina	187,121	324,666	502,441	169	55
Makkah	141,273	259,951	482,087	241	86
Taif	272,271	193,584	380,308	40	97
Al-Baha	42,198	108,913	163,468	287	50
Abha	156,393	132,468	254,889	63	92
Khamis Mushail	47,672	99,995	152,876	221	53
Hail	85,276	152,623	126,947	49	17
Besha	16,582	45,276	61,669	278	36
Najran	17,821	42,598	53,619	201	26
Kaseen	84,627	177,960	158,802	88	11
Al Jouf	66,644	81,508	58,275	13	29
Tabuk	62,541	121,227	185,127	196	53
Jizan	19,680	49,950	260,464	1,224	422
Total	2,128,562	3,232,059	4,682,579	120	45

Source: Grain Silos & Flour Mill Organization, Jeddah Mill.
Unpublished report.

Fig 5-1 FLOUR PRODUCTION IN THE KINGDOM



Source: Grain Silos and Flour Mills Organization 1980 - 1981

Table 5.8 Government subsidy for Imported Flour

Elements of cost in S.R.	Sack of powdered flour 75%*	Sack of normal flour 85%	Sack of barley
Cost	80.50	63.0	53.62
Profit 10% (for trader)	8.10	6.30	6.36
Cost of transport	1.30	1.30	1.30
Port duties	1.00	1.00	1.00
Total cost	90.90	71.60	61.28
Selling price	13	11	13
Net subsidy per sack	77.90	60.60	48.28

Source : Grain Silos & Flour Mills Organization, Annual Report
1980-1981, p.46.

* Percentage of extraction. Sack = 50 kg.

Table 5.9 Government Subsidy For Local Flour

Elements of cost in S.R.	Sack of powdered flour 75%*	Sack of normal flour 85%	Sack of bran
Include all elements of production	53.19	48.29	15.37
Sale price	13	11	6
Net Subsidy per sack	40.19	37.29	9.37

Source : Grain Silos & Flour Mills Organization, Annual Report
1981, p.46.

As can be seen from Table 5.10, in addition to Jeddah's urban market the mill supplies another 13 areas, not only in the Western Region, but also to other areas in different parts of the Kingdom. In 1979-80 Jeddah City took 44 per cent of flour production, a proportion falling to 39 per cent in 1981-82. Medina was the second largest market but the most rapidly growing demand came from Jizan. The sphere of influence represented by this pattern of supply of a staple food commodity, (a theme discussed more fully in Chapter), is of course not static because new silo and flour mill plants are being built at other centres. The new Khamis Mushayt plant will certainly lessen the dependence of Asir on Jeddah in this respect. The plant in Jeddah has 252 employees, but the number of Saudis is very small, 36 employees or 14 per cent of the total work force, and most of these administrators.

The flour mill is located in the vicinity of Jeddah Port, south of Jeddah, close to the refinery (see Fig. 5.2). Imported grains, mainly from USA and Canada, are commonly thought to outweigh local materials, although there are no data to support this belief.

The products are either sold to wholesalers or directly to bakers. Table 5.10 shows the amount received by wholesalers and bakeries in Jeddah and also in other regions.

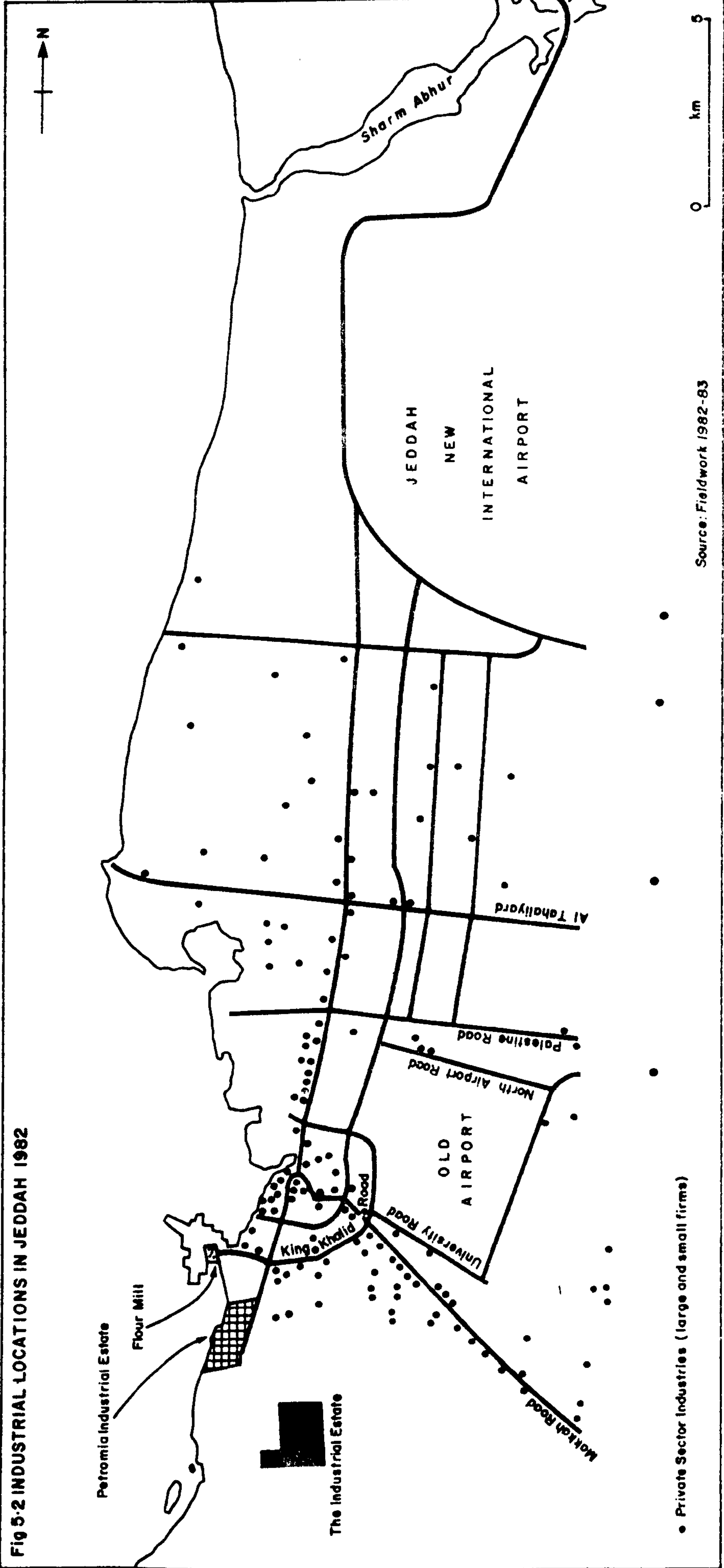


Table 5.10 Sales of Flour From the Jeddah Mill Distributed Between
wholesales & Bakeries in the Kingdom in 1981-1982

Location	Wholesaler	%	Bakeries	%	Total
Jeddah	1,165,067	63.3	676,540	36.7	1,841,607
Western Region	1,067,996	81	248,981	19	1,316,977
Southern Region	747,034	77	222,713	23	969,747
Northern Region	321,815	87	48,534	13	370,349
Central Region	152,289	83	31,610	17	183,899
Total	3,454,201	74	1,228,378	26	4,682,579

Source : Calculated from Grain Silos & Flour Mill, unpublished report, 1982.

From Table 5.10 one can see that sales were predominantly to wholesalers 74 per cent although the proportion thus sold in the city, 63.3 per cent was lower. This is a natural reflection of the lower costs and greater convenience of bulk deliveries over considerable distances.

The location of the flour mill at Jeddah appears to have given city bakeries some further advantage in that it has given extra encouragement to the growth of large bakery firms in the city.

The production of bran as a by-product, together with the fact that the Grain Silos and Flour Mills Organisation is also responsible for organizing all grain imports, have made Jeddah the most important supply centre in the Western region for the supply of animal feeds. This has become significant mainly since the late 1970's as production units for eggs, poultry, meat and dairy products have rapidly increased in numbers and size near all the towns of the Western region.

B. Private Sector

Private sector industries in Saudi Arabia have benefited considerably from incentive policies. In the context of this study the two most relevant and most important incentives are, first, the interest free loans made by the Saudi Industrial Development Fund of up to 50 per cent of a new company's capital, and secondly, the provision of facilities at Jeddah's industrial estate. SIDF loans are only made to approved and licensed new or expanding industries and data relating to areas other than whole Emirates (in this case Makkah) are not usually available. Makkah Emirate as a whole received 28 per cent of cumulative SIDF approved industrial loans between 1394/95 AH and 1401/02 AH. (27) However, it is known that between 1977 and 1980 203 such manufacturing projects were licensed in Jeddah. (28) The analysis which follows relies almost entirely on fieldwork data collected by the candidate in 1982. It should be noted however that the situation in the private industrial sector is highly dynamic and rapidly changing. Given these and other protective and low-cost input advantages which Saudi Arabian private entrepreneurs enjoy, it would be surprising if private sector activity was not enjoying a period of rapid expansion.

1. Large establishments

When survey data for the size of the workforce in a sample of large establishments was examined, the range appeared as very large, the number of workers varying between 10 and 550 workers. Table 5.11 summarises the findings which reflect the fact that in recent years there has been a trend towards the building of large factories to meet the rising volume of local demands (see Table 5.11).

Table 5.11 Size of workforce in large private industrial establishments, Jeddah 1982

Number of Workers	Frequency	Per cent
10 - 50	24	45.2
51 - 100	14	26.4
101 - 200	6	11.4
201 - 556	9	17.0
Total	53	100

Source : Fieldwork 1982.

Table 5.12 categorises by industrial groups the large establishments and the number of workers employed by each group. This emphasises the fact that four of the industrial groups comprise about 74 per cent both of the number of establishments and of workers. The bricks, block, cement and the glass industry group occupies the first position, accounting for 25.4 per cent of the total number of workers and 20 per cent of the total establishments. In joint second position comes the foodstuffs and beverage group and manufactured metal products and machinery group each with 18.5 per cent of the total establishments. In third position comes the chemical and plastic group with 17.7 per cent of the total establishments. Other groups have a low proportion, varying between 8 and 2 per cent of the total. The nine industrial groups as shown in Table 5.12 are examined in some detail together with the sub-groups of each major group.

Table 5.12 The Distribution of the Large Private Establishments And
the Workers Among the Industrial Groups up to the end of 1981

Industry	No. of Establ- ishments	%	No. of Workers	%
Foodstuffs, beverages & tobacco	56	19.1	3,563	20.6
Textiles,readymade clothes & leather	13	4.4	1,128	6.5
Wood products & furniture	15	5.1	652	3.8
Paper, printing and publishing	23	7.8	1,347	7.8
Chemicals & plastic products	52	17.7	1,902	11.0
Bricks, block, cement & glass	58	19.8	4,383	25.3
Manufacture of metal products	54	18.4	2,803	16.2
Machinery and equipment	7	2.1	494	2.9
Other manufacturing industries	15	5.2	1,015	5.9
Total	293	100	17,287	100

Sources : Calculated from Ministry of Industry & Electricity, Industrial Affairs Agency, Statistics Section. Industrial licences up to the end of 1981 under the laws of National Industries Protection & Encouragement and Foreign Capital Investment.

Jeddah Chamber of Commerce and Industry, Directory of National Industries, City of Jeddah 1982.

Fieldwork 1982.

A. Foodstuffs, Beverages and Tobacco

This group involves processes which are mainly dependent on imported goods, and only a few cases on local materials. The list of licensed factories includes only twelve sub-groups, and gives detailed characteristics for several items in each sub-group; slaughtering, preparing and preserving meat, dairy products, canning and preserving of fruits, vegetables, fish and similar foods, vegetable and animal oils and fats, bakery production, sugar factories and refineries, cocoa, chocolate and sugar confectionery, animal fodder, soft drinks and carbonated water, and food products not elsewhere classified. Table 5.13 indicates the numerical distribution of these industries and of their labour force size.

From Table 5.13 one can note that there is considerable disproportion between the number of establishments by type and the number of workers. Some industries have a small number of establishments compared to the number of workers, such as the soft drinks and carbonated water sub-group which comprise only 7 factories or 12.4 per cent of the total establishments, but employ 25.6 per cent of the total workers. This can be attributed to the existence of one or two very large factories in this industry, for instance the Pepsi Cola factory which is located on Medina Highway north of Jeddah, employing more than 500 workers. This factory alone contains more workers than the nine cocoa, chocolate and sugar confectionery factories which, combined, have 462 workers or 13 per cent of the total. In both industries (soft drinks and cocoa, chocolate and sugar confectionery) raw materials are mainly imported from Europe and the U.S.A, only water being locally derived. Two soft drinks factories are located in the Industrial Estate; the other five factories are distributed throughout the city. Three are located in the northern part of the city and two located in the eastern part along Makkah Road. Coaoa, chocolate

Table 5.13 Distribution of Number of Establishments and the Workers in
the Foodstuffs, Beverages & Tobacco Groups By Sub-Groups,
up to the end of 1981

Foodstuffs - sub-group	No. of Establ- ishments	%	No. of Workers	%
Slaughtering, preparing & preserving meat	3	5.3	130	3.6
Dairy products	7	12.5	610	17.0
Canning & preserving of fruits & vegetables	4	7.0	386	10.8
" " of fish and similar food	1	1.8	175	5.0
Vegetable and animal oils and fats	1	1.8	200	5.7
Bakery production	8	14.3	286	8.0
Sugar factories and refineries	1	1.8	50	1.5
Coco chocolate & sugar confec- tionery	9	16.0	462	13.0
Animal fodder	5	9.0	120	3.3
Soft drinks and carbonated water	7	12.5	913	25.6
Food products not classified elsewhere	10	18.9	231	6.5
Total	56	100	3,563	100

Source : Calculated from Ministry of Industry & Electricity 1981.
Jeddah Chamber of Commerce and Industry 1982
: Fieldwork 1982.

and sugar confectioneries have two types of products; traditional, such as Halawa Taheneya and modern products, such as toffee and chocolate candies. Four establishments are located in the Industrial Estate, the other five being scattered in different parts of the city, mainly in the southern part.

Dairy products account for about 17 per cent of the total workers and 12.5 per cent of the total establishments and are mostly concentrated at two locations : the Industrial Estate and in the southern part of the city. This industry, only introduced to the city in the last few years has its entire production of milk, yogurt, flavoured milk, ice creams and butter consumed locally, because of the heavy demand for all dairy products. Raw materials include dried milk mainly imported from Europe and the USA, only water being locally derived.

Bakery production accounts for 14.3 per cent of total establishments and 8 per cent of total workers. This industry comprises five bakeries distributed throughout the city to meet the high daily consumption of the product; of the two macaroni factories, one is located in the Industrial Estate, the other in the north-east of the city on Makarona Road. Part of the production is transported to other cities in the Kingdom. A rice factory is the only plant of its kind in the Western region and is located at Jeddah port for easy transport and communications.

Fruits and vegetable canning accounts for about 10.8 per cent of the total workers and 7 per cent of the total establishments. Most of this industry's production is of fruit juices and depends entirely on imported raw materials. Vegetable processing has not yet developed since there is a shortage of vegetable production and all fresh vegetables are consumed locally.

The animal fodder industry is characterized by the small number

of workers, 3.3 per cent of the total workers and 9 per cent of the total establishments. All the five animal fodder establishments depend mostly on imported materials.

Fish and similar food canning, animal oils and fat, and slaughtering and preserving meat industries have relatively large numbers of workers per establishment. Most of these industries were introduced recently to the city.

Food products not elsewhere classified comprise factories producing a variety of products such as ice, sliced potato, honey etc.

B. Textiles, Ready-Made Clothes and Leather

All the factories in this group are modern and new, employing 1,128 workers or 6.5 per cent of the total work force. The industry depends heavily on imported materials such as cotton yarns, thrown silk yarns, wool yarns and synthetic fibres. Some of the textile establishments specialize in producing ehram towels for pilgrims, gutras and shomag of checkered headcloths for local people. The demand for these products continues all year round, although the demand for ehram increases during Hajj and Ramadan seasons. In this group there are two factories producing different types of carpets such as prayer, decorative and floor carpets. There is also a production of tents of all types particularly to meet the increase during Hajj season. Two ready-made clothes factories produce women's dresses, girls' dresses and traditional clothes mainly for men and boys thuob.

The leather industry forms a very small element in the present industrial structure of the city. The location depends largely on locally-produced hides (derived from the nearby slaughter house), salt and water supply. Most of the leather works is in tanning rather than dressing. The absence of shoe factories in the city does

not mean that previously there were no shoe factories. In the mid-1950s, Jeddah had the only shoe factory in the Kingdom, but it was unable to withstand the competition from imported goods. Following little interest from the government to protect such an industry the factory closed down.

C. Wood Products and Furniture

The wood industry produces a variety of wooden products such as doors, windows, pre-fabricated wooden houses, hardboard panels, wooden frames, construction timber, and similar items for house-building. The location of these factories is mainly related to the market. Wood processing employs about 42 per cent of the total workers of this group.

The furniture industry is considered to be among the important industries in Jeddah, partly due to the increase in furniture demand and the rising standard of living of the population of the city, and partly to the housing expansion in the city itself and in other cities in the Western region. There is also a heavy demand from governmental institutions. All the furniture factories depend entirely on raw materials imported from abroad, since there is no timber in the Kingdom. There are nine large furniture factories, of which two each employ more than 300 workers. The number of workers in the other factories varies between 10 - 50 workers. The furniture consists generally of bedroom suites, dining room suites, sitting room suites, office furniture, desks, shelves for school libraries and tables.

D. Paper, Printing and Publishing

The paper industry is restricted to the processing of paper bags, cartons, paperboard, paper tissues, paper sheet, and envelopes. Paper processing employs about 37 per cent of the total workers, and 42 per cent of the total establishments in this group. However, the industry is still in its

infancy. About 50 per cent of this industry is located in the Industrial Estate, and the rest is distributed throughout the city, particularly the Northern section of the CBD. All the raw materials are imported from abroad. However, there is a great demand for all paper products. This can be attributed to the increased demand for paper bags, by shopkeepers, butchers etc, and an increased demand for carton products by foodstuffs factories such as dairy products, fruit, vegetables etc. which depend on a supply of packaging materials. The printing and publishing industry contains 13 establishments, of which two are located in the Industrial Estate and the others are distributed throughout the city. Most printing establishments are highly modernized and contain advanced equipment. The printing establishments deal with newspapers, particularly in Arabic, school and university books, magazines, statistical books, advertisements and booklets and commercial printed matter.

E. Chemicals and Plastic Products

Within the chemicals industry there are 10 distinct sub-groups: industrial gases, fertilizers, paints, drugs, soap, detergents, perfumes, matches, insulating materials, rubber, in addition to plastic products. The average number of workers in the chemical factories is small compared with other industrial groups, one fact that can be attributed to their capital, rather than labour, intensive character and to the absence in Jeddah of large petrochemical industries. Of the 52 factories, only one factory employs 125 workers, the rest varying between 11 and 96 workers. Some of the chemicals industry products such as paint, and insulating materials are mainly associated with the boom in building and housing. There are five paint factories in the city, of which three are located in the Industrial Estate, the other two plants located in the Al-Salama quarter to the north of the CBD and the second is in

King Khalied Street. The number of employees in the paint factories is 159, or 8.4 per cent of the total workers in this group. Insulating materials have been introduced to the city recently as a consequence of the introduction of pre-cast houses in the city. It has been found that some owners of conventional houses have now begun to use insulating materials, particularly for roofs. The detergent and soap industry is one of the most important and oldest industries in the city and the first such factory, not only in Jeddah but in the Kingdom, is examined as a case-study. This factory is sited in Makkah Road, occupying 16,500 sq.m. It employs 285 employees of which 58 are Saudi. Production started in 1965 with 7000 metric tons yearly, increasing to 48,000 tons by 1982. This factory produces different kinds of detergent under licence, such as Tide, Daz, Cheer and Camay which satisfy the whole market's requirements. The quality of the products is good and competes successfully with other imported detergents. All raw materials required for this factory and other detergent factories are imported from abroad. In addition to this plant there are four other factories producing a variety of detergent products. The plastics industry accounts for about 54 per cent of the total establishments in this group and produce a range of plastic articles such as plastic containers, household articles, egg trays, plastic pipes and sheets, plastic conduits for electrical installation, sacks and ropes. The demand for plastic articles is increasing rapidly and since local plants cannot satisfy the whole market the import of plastic products, mostly from S.E. Asia and Europe, continues.

In addition to the above mentioned industries in this group, there are a few others in the city, such as perfume, rubber and matches. There is only one match factory in Jeddah, located in the Industrial Estate with a capacity of 108 million match boxes. In Jeddah there are two perfume factories located in the Industrial Estate producing perfume,

cologne, creams, shampoo, nail polish, lipstick and deodorant with a capacity of 2,812 tons a year. The production of both factories cannot satisfy local market needs and the importation of perfume continues, mostly from France.

F. Buildings Materials

The manufacture of building materials occupies the first position among the industrial groups, both for the number of workers and establishments with 25.1 per cent and 19.9 per cent respectively. The building material industry, as represented by cement making is the oldest industry in the city or even in the Kingdom, established in 1954 as a result of the first boom in housing construction in Jeddah. At later stages, other factories appeared producing different types of building materials, as the demand for housing accelerated, such as cement blocks for walls, structural tiles, cement pipes, natural stone forms, aggregate, sand, gypsum, pre-cast units of ordinary and reinforced concrete and ready mixed concrete. Among these industries, those producing graded aggregate and sand, pre-cast units and ready mixed concrete were introduced to the city, mainly after 1973, owing to the effect on housing after construction in both private and government sectors of the jump in oil revenues and expenditure. These three industries in 1982 accounted for 52 per cent of the total of establishments in this group, employing 2,313 workers, about 53 per cent of the total. Most raw materials required for these factories and other building material factories are available locally. There are only 12 factories located in the Industrial Estate or about 20 per cent of the total establishments. About 80 per cent of building material factories are distributed throughout the city, mainly along Medina Road north of the CBD.

Since the cement factory was the first sign of industrial activity in the city, and included one of the largest factories in the city,

this is worthy of examination in some detail.

Before the establishment of the cement factory in Jeddah, all the city's and the Kingdom's cement requirements were imported from abroad. The factory commenced production in 1958 with a capacity of 300 tons per day increasing in the following year, to 400 tons p/d.⁽²⁹⁾ The factory is situated on the road to Medina. The total capacity in 1982 was 2,000 tons daily,⁽³⁰⁾ but production was still not sufficient to cater for the demands of the local and regional market because of the great increase in demand.

The cement factory produces two types of products : standard Portland cement and lime. In 1980 the total cement production of the Jeddah factory was about 630,218 tons. The three large cement factories in Jeddah, Riyadh and Hofuf were together unable to satisfy the Saudi market. In this situation the government allowed cement factories to import cement to satisfy local and national demand. Domestic and imported cement prices are to some extent controlled in favour of consumers. The cement factory at Jeddah ranked first in terms of production until 1977, but in 1978 the Jeddah factory dropped in production (see Table 5.14).

Production of lime also increased rapidly, particularly in 1978, 1979 and 1980 (see Table 5.15 showing the 1970-1980 production figures). Capital investment in the cement factory has been increased very rapidly for expansion purposes. The company's initial capital was SR 25 million. This was raised to SR 50 million in 1968 to meet the first stage of the expansion. The second stage of the expansion increased capital investment to SR 150 million. The third expansion of the company will be a new plant in the city of Rabegh giving the factory a production capacity of 4,000/5,000 tons per day.⁽³¹⁾ At present the factory employs about 500 workers, in addition to 100

Table 5.14 Cement Production in Saudi Arabia (tons)

Year	Jeddah		Hofuf		Riyadh		Total
	Tons	%	Tons	%	Tons	%	Tons
1970	370,669	54.9	210,730	31.3	93,551	13.8	674,950
1971	341,323	48.5	304,390	43.3	57,658	8.2	703,371
1972	327,601	36	401,815	44.2	180,959	19.8	910,375
1973	310,876	32.3	370,238	38.4	281,050	29.2	9,641,174
1974	367,541	34.8	351,605	33.2	337,157	32	1,056,303
1975	457,585	40.2	414,857	36.3	267,957	23.5	1,140,399
1976	419,661	38	363,221	33	321,036	29	1,103,918
1977	483,483	38	403,564	32	379,767	30	1,266,814
1978	486,611	29.8	533,710	32.5	617,474	37.7	1,637,795
1979	501,889	18.7	907,240	34	1,264,991	47.3	2,674,120
Average	4,067,239	33.5	4,261,370	35.2	3,801,605	31.3	12,132,219

Source : Statistical Year Book 1979

Table 5.15 Lime Production in Jeddah (tons)

Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Total Production	7828	8777	12024	11976	10801	11391	9558	6910	14910	25404	27440

Source: Statistical Year book 1979

Arab Cement Co. Annual Report No.21 1980, Jeddah.

administrators. Before 1973 the percentage of Saudis in the work force was about 95 per cent, but since then the proportion declined to about 30 per cent. (32)

G. Manufactured Metal Products

The metal products group comes in third position after the building materials and foodstuffs group with 18.4 per cent of the total establishments and 16.2 per cent of the total workers. This industry produces a variety of metal products such as steel bars, steel fittings, road guard rails, welded iron mesh for reinforcement of concrete, iron tanks, truck boxes, drawn oxidized and coloured aluminium profiles, copper pots and trays, aluminium kitchen gadgets, stainless steel household utensils, metal furniture, frames for spring mattresses, aluminium doors and windows and turned spare parts. The quality of products is good compared with imported articles and they compete successfully. Most of the raw materials are imported from abroad, mainly from Europe. The steel mill in Jeddah supplies only a small proportion of the requirements of the metal working establishments. About 27 per cent of the metal working establishments are sited in the Industrial Estate and the rest are distributed throughout the city. Detailed location is largely linked to the city's communication services, as well as to the market because imported materials and products are bulky and expensive to transport. Of the metal products, aluminium has become very popular and is used widely in house construction for doors and windows and has replaced wooden articles which were traditionally famous.

H. Machinery and Electrical Equipment

This industry has been introduced recently into the city and is not yet fully developed. This industry consists generally of firms manufacturing electric water heaters, electrical cables and wires, lampshades, switch boxes and distributors and lighting distribution

boards. It is noteworthy that one single plant in this group employs about 56 per cent of the total workers of this sector. All machinery and equipment plants depend entirely for their manufactures on finished and semi-finished imports and industrial processes consist only of the assembly of electrical and other parts. Most of the machinery and equipment factories are located in the Industrial Estate because all these industries were introduced after the Industrial Estate was established.

K. Other Manufacturing Industries

This group includes a considerable range of industries such as shipbuilding, assembly of motor vehicles, motorcycles and bicycles, red brick making and jewellery. All the above industries depend entirely on imported raw materials except red brick making and are still in the early phase of development. Among these factories one plant employs more than 50 per cent of the workers in this whole group. This is the National Automobile Industry located 14 km north of the CBD on the Medina Road. In 1977 the first locally assembled truck left the assembly line. In 1978 the total production was 1,000 trucks. ⁽³³⁾ The original plan was to assemble 4,040 trucks in the first year and 5,050 in the fifth year, but in 1982, which was the fifth year of the plant, the total assembly of trucks was 8,200. ⁽³⁴⁾ This is due to the great demand for all sizes of trucks in the local and national market and other markets in the Kingdom. The capacity of the plant was designed to produce 6,500 units per year on a one-shift basis, or 11,000 units per year on a two-shift basis. At present the factory employs about 550 men.

The above-mentioned industrial groups vary considerably in the extent of their distribution spheres of influence. Generall, all

large establishments in Jeddah make products which are sold to customers who either live in the city or in the Western Region. Some industries export products to other regions in the Kingdom, such as automobiles, detergents, dairy produce and some textile products.

Jeddah itself offers a large end-user market for large-scale industries with its sizeable urban concentration of population with high levels of consumption. Through its well-developed wholesale marketing agencies it also acts as the single most important regional and national distribution centre for Saudi industrial products.

2.Small Establishments

As noted at the commencement of this chapter small industrial establishments were numerically dominant in both 1971 and 1976 with about 93 per cent and 91 per cent respectively of all establishments. In 1981, in Jeddah City there were 3,523 small industrial establishments, employing 18,475 workers, which formed 92.2 per cent and 51.6 per cent of the city's total industrial establishments and workers respectively. Small establishments are still dominant in the industrial structure of Jeddah City.

This situation dominates the industrial structure of most, if not all, Middle Eastern States and developing countries. Even in industrialised countries the numerical importance of small establishments which employ between 1 - 9 workers is high. For example, in the USA 51.3 per cent and in Japan 77 per cent of industrial plants are of this character.⁽³⁵⁾

Most of the industrial establishments in Jeddah which employ less than 10 persons are handicraft workshops dealing in, for example, dress and leather making, vehicle and housing equipment repairs, furniture making, carpentry, floor tile manufacturing, bakeries and printing and publishing.

In terms of the number of establishments, the dress and leather making group, is the most important, forming 33.6 per cent of the total establishments in the city. This is followed by vehicle and housing equipment repairs with about 29 per cent, furniture making, carpentry and floor tiles manufacturing with 8.6 per cent each, food industries 5.5 per cent, printing and publishing 3.7 per cent, and other manufacturing industries 2.2 per cent. In terms of the number of employees, the vehicle and housing equipment repairs industries are the most important, with 58 per cent of the total employees in small establishments in the city, followed by floor tile manufacturing industries with about 17 per cent, dress making and leather 13 per cent, furniture and carpentry with about 10 per cent, food industries and printing and publishing with 8 per cent for each, other manufacturing industries with 3-7 per cent and chemicals with only 1 per cent.

These numerous small industries are scattered over different parts of the city (see Fig. 5.2). They have no particular specialized locational requirements as they produce various types of cheap products in response to the local demand of dealers. In fact, although all these small establishments serve the local population, they also draw custom from the whole region in much the same way as do the lower order commercial services. The high frequency of multi-purpose journeys to the city from an extensive regional hinterland includes a considerable direct end-user, as well as dealers purchasing from these small-scale industries. It should be noted that all the small industrial establishments in the city belong to the private sector, a situation different from large establishments which are divided between the private and public sectors as noted earlier.

Labour

Because of the importance of the industrial labour force it is studied here under a separate heading. The relatively high rates of growth in the industrial sector in Saudi Arabia as a whole which have occurred since 1973-74 as a result of the great increase of the oil revenue, together with the development plans introduced by the government, have caused the number of employees in this sector to rise rapidly. However, the Kingdom has increasingly faced a great shortage of indigenous manpower which has presented serious problems to industrial development. The manpower needs are met by importing expatriate workers and by attempting to develop a national work force through an expansion of general educational facilities and vocational training (see also Chapter 6). At present vocational schools and institutes, as well as universities, share in the preparation of staff. The present situation has improved somewhat since the first half of the 1970's.

The high rates of population growth discussed in Chapter 3 have resulted in a rise in the number of people of working age; in 1974 this constituted about 56.6 per cent of the total population in Jeddah according to the census of that year. Increasingly, graduates of universities, institutes and training schools, as well as unskilled workers are being attracted into industry, especially as the conditions of work in modern factories have improved. In addition, the private industrial sector has started to offer high salaries compared to other sectors mainly to attract Saudi workers who previously found opportunities mostly in the service sectors. One other important factor is the relatively high rates of growth in education during the last few years (see Chapter 6).

In addition to a general shortage of labour, there is a specific shortage of technical and managerial staff. Even if vocational and other education succeeds in producing new recruits at this level, the deficiency will take some time to fill. From Table 5.16 one can see that in the

Table 5.16 Number of Employees in Jeddah Industrial Estate and Salary-wage Levels in 1980 and 1981

Employment categories	Number		Total	Salary - wage level in S.R.	Percent- age of Saudi to total em- ployment	Number		Salary - Total	Salary - wage level in S.R.	Percent- age of Saudi to total em- ployment
	Saudi	Non Saudi				Saudi	Non Saudi			
Skilled workers	75	1,147	1,222	2,486	6.1	68	1,323	1,391	2,135	4.9
Unskilled workers	64	1,550	1,614	1,443	4.0	189	1,597	1,786	1,438	10.6
Engineers/Tech- nicians	2	111	113	5,159	1.8	15	208	223	6,103	6.7
Managerial/Admin- istrative	61	485	546	3,447	11.2	114	649	763	3,925	15
Others	18	266	284	1,742	6.3	65	345	410	2,543	16
Total	220	3,559	3,779	-	5.8	451	4,122	4,573	-	9.9

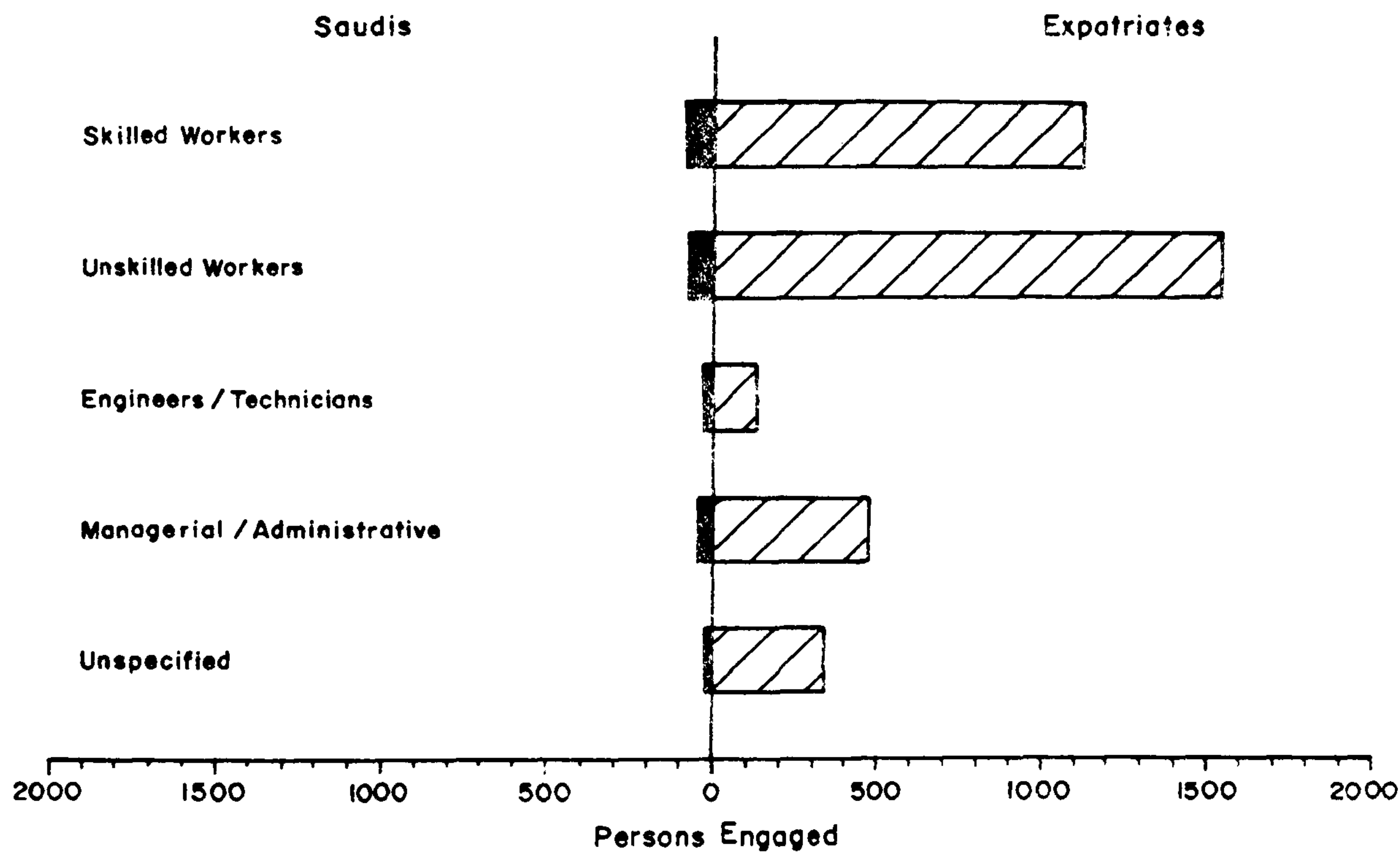
Source : Unpublished report, Jeddah Industrial Estate 1981.

sample of industries provided by the Industrial Estate about 43 per cent of all workers are unskilled, whilst engineers and technicians represent a very small proportion with only 2.9 per cent of the total work force. The same table indicates that the dependence of the manufacturing sector on expatriate manpower of professional and technical type has, in fact, increased over the one year for which data are available.

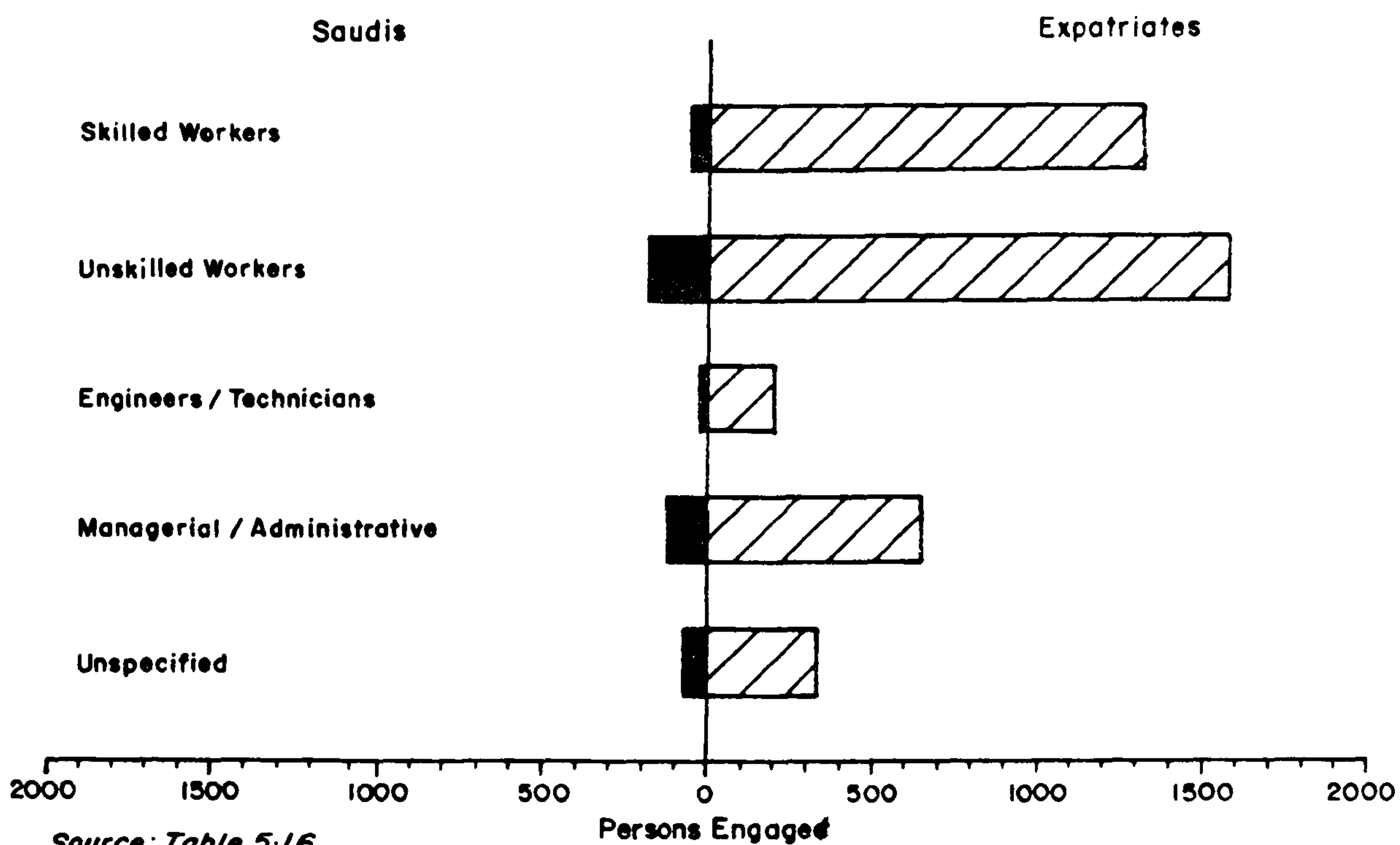
As can be seen in Table 5.16, of the total employment in 70 establishments in 1980, 5.8 per cent were Saudis and 94.2 per cent expatriates. The number and proportion of Saudi workers increased in 1981. (Fig. 5.3). The dependence of industry on an expatriate supply of manpower becomes even more glaring in the categories of engineers and technicians. Moreover, results obtained from the author's own fieldwork of 1982 show that about 91 per cent of the factories employ totally expatriate engineers and technicians. The increase, in general, of the proportion of Saudi engineers and technicians is linked probably with the relative rise in salaries of engineers and technicians, managerial, and administrative grades, whilst skilled workers' wages decreased. The 1974 census throws some limited light on the nature of the personal characteristics of workers. This census shows that at that time males constitute 99 per cent of the total permanent labour working in the manufacturing industry. Most of the women working in manufacturing industries were involved in traditional manufacturing such as textiles and ready-made clothes for men and women.

Although significant developments have occurred in the industrial sector, the proportion of the total labour force employed in industry remains low. In 1962 the proportion of people working in industry was only 5.5 per cent, but following the establishment of new factories an important increase took place in the labour force in the industrial sector, giving an industrial occupational proportion of 14 per cent in 1974 and in 1978 only 14.6 per cent.

Fig 5-3 STRUCTURE OF EMPLOYMENT AND EMPLOYMENT CATEGORIES,1980



STRUCTURE OF EMPLOYMENT AND EMPLOYMENT CATEGORIES, 1981



Source: Table 5-16

The Spatial Distribution of Industries

The location of industrial establishments is affected by several factors. These factors include : accessibility of raw materials and the cost of their transport; proximity of markets and the cost of transport of finished goods; sufficiency and suitability of labour; linkages with other industries; service needs for water, gas and electricity; disposal of solid and liquid wastes; and the amount of fixed plant. The relative importance of these factors varies with each industry and, to a lesser degree, with each factory. In addition to these economic factors, other location factors are important, such as government and municipal policies. Personal consideration may also affect location. (36) All these factors should be borne in mind when analysing the spatial distribution of industrial establishments in Jeddah shown in Figure 5.2.

As far as the location of the industrial establishments within the city is concerned, there was no national formal policy for industrial location, as between the regions or the cities. Siting decisions within the city, particularly before the establishment of the Industrial Estates, were mainly influenced by individual personal perceptions of entrepreneurs, perceptions (especially in small-scale industries) as vague as a desire to be somewhere close to the port, to the CBD and to their own homes. Accordingly, industrial establishments in the city show a rather scattered distribution but with some concentration in the south. To study the spatial pattern, the following divisions were used.

1. Southern district
2. Central district
3. Northern district

1. Southern District

Most of the industrial establishments are concentrated in this district. About 79 per cent of the establishments employing more than 10 workers are located in this district which, however, has to be subdivided as follows:

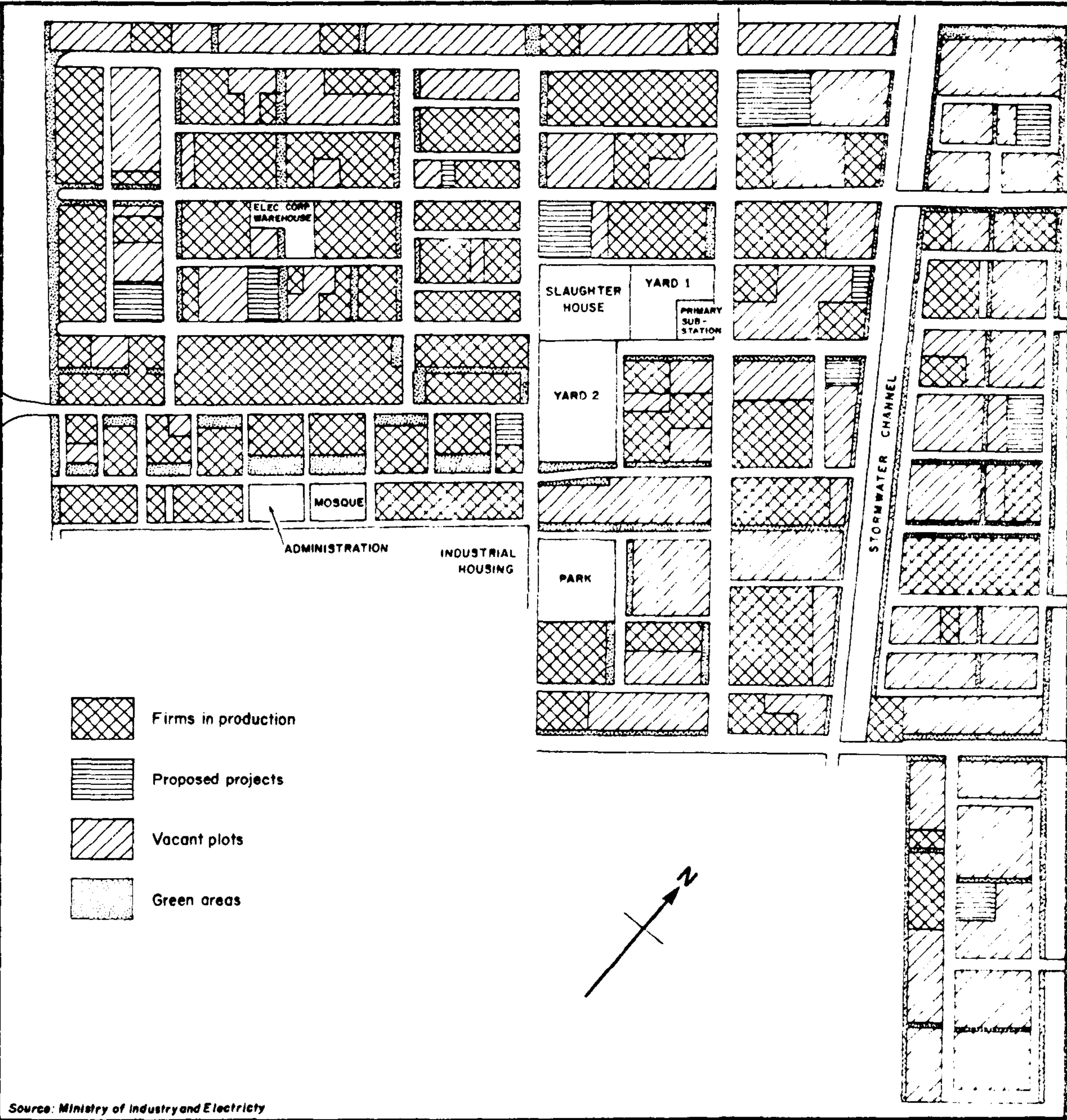
A. South East Section

The focal point of this section is the Industrial Estate which is located 8 km south east of the CBD (see Fig. 5.2). Since its foundation the Industrial Estate has been expanded through three stages of development. At present the estate covers a total area of approximately 4,670,000 square metres. As a result of the industrial development of the last few years, and noted earlier in this chapter, it is planned to complete by 1984 a new estate neighbouring the existing development. This will have an area of approximately 3,640,000 square metres. (37) The present estate is divided into plots of various sizes to house all factory sizes up to 70,000 square metres (see Fig.5.4) Table 5.17 shows the original estate and new expansion phase.

The industrial estate provides advantages and facilities over other sites: (38)

- i) Suitable plots of land in excellent locations at the nominal rent of 0.08 SR per square metre. This rent also includes a charge for the maintenance of the general utilities.
- ii) The use of common utilities such as fresh water, sewage systems, drainage, power supply, telephone and asphalted and illuminated roads.
- iii) The use of central workshops equipped to provide factories with the manufacturing capability of some spare parts etc.
- iv) Available land for the accommodation of industrial workers.

Fig 5-4 JEDDAH INDUSTRIAL ESTATE



Source: Ministry of Industry and Electricity

Table 5.17

Jeddah Industrial Estate

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	Original Estate		New extension	
	Phase I	Phase II	Phase III	Phase IV
1. Location		8 km south east of the Central Business District		
2. Area Total	498,000 sq.m.	1,044,000 sq.m.	3,120,000 sq.m. completed	
Industrial use	280,000 sq.m.	450,000 sq.m.	1,600,000 sq.m.	3,000,000 sq.m.
Infrastructure roads and services	220,000 sq.m.	990,000 sq.m.	3,300,000 sq.m.	
Housing			1,000,000 sq.m.	
Total including housing			9,000,000	
3. Area allocated for industries up to 1980	All sites allocated		All sites allocated	140,000 sq.m.
4. No.of projects/com-panies to which above land allocated	98		127	3
5. Areas available for allocation	No sites available		No sites available	2,860,000 sq.m.
6. Position of : - infrastructure	All infrastructure fully developed		All infrastructure fully developed other than sewerage system. Treatment plant for sewerage water due for construction	To be constructed and all infrastructure and services to be developed during 1981-1984
Service	All services available		All services available	
Workers' amenities	All amenities other than housing area		All amenities	

Source : Saudi Consulting House, unpublished Report : Ministry of Industry and Electricity. Industrial Estates in the Kingdom 1982 p.14. Fieldwork 1982.

v) The use of other general common facilities e.g. mosque, bank, post office, police station, medical centre and a special Civil Defence Unit (see Fig. 5.4). A study carried out by Senotic, an engineering consultant, in 1977 shows that the water requirement will increase from 4,420,000 cubic metres in 1980 to 10,753,800 cubic metres in 1985. Industrial land requirement will also increase from 1,742,000 square metres in 1980 to 3,921,000 square metres in 1985; the labour requirement will increase from 11,101 in 1980 to 20,099 workers in 1985. (39) However, lack of water represents one of the main obstacles facing factories in the industrial estates. Most plants bring in their water requirement by trucks, which is expensive compared to the regular sources. Fieldwork survey shows that about 92 per cent of the answers regarding problems estate factories are facing concerned water supply.

The industrial estate contains 121 factories producing a variety of products such as foodstuffs, textiles, furniture, paper, printing, chemical products, building materials, metal products, electrical appliances and motor vehicles. Among these industries chemical and metal products represent about 40 per cent of the total establishments in the estate and they are well scattered.

The central organisation of the industrial estate helps in facilitating a continuous interaction among industries located therein, and therefore helps in the growth of a more integrated interlinked industrial structure. A considerable area of land is still available for industrial development in this area relatively distance from the main populated area of the city. This last point has a negative effect since most workers' accommodation available is some distance from their place of employment but most factories provide transport services for their own workers. 82 per cent provide such transport, the rest of the workers using public transport. (40)

In addition to the industrial estate, industrial units are distributed in several neighbouring areas of this south eastern section, in particular metal, building materials, carpentry, foodstuffs and chemical industries. Large establishments are mainly found to the north-east, where cheap unoccupied land is available and highway facilities good. Small establishments are chiefly concentrated to the northwest, an overspill area on the edge of the port and main built-up area. Survey data suggests that relatively lower land prices and rents for plots of land which were large according to urban standards provided an important attraction, together with proximity to the port and the possibility of expansion southwards (Fig. 5.2).

B. South West Section

The focal point of this area is the Petromin Industrial Estate located south-west of the CBD (Fig.5.2). The Steel Rolling mill was the first establishment to be built in this location in 1966 which can be considered the date of the establishment of the estate. This estate contains small desalination and electric generating plants. In addition to the steel rolling mill, two other large establishments have been built in the area, Jeddah oil refinery and the lubricating oil factory. The expansion of the estate led to the expansion of the desalination and electric generating plant to meet the increased demand for water and electricity. All the establishments in this area belong to the public sector and they contain 75 per cent of the public sector establishments in the city. Immediately north west of Petromin Industrial Estate, is the flour mill (Fig.5.2). The location of these large industrial establishments in this area can be attributed mainly to the proximity of the port. All the raw materials used by these factories are heavy and large and they handle great volumes of raw materials and products. Transport costs represent a high proportion of the total

value of input, especially significant for sea-borne imports. The prevailing winds carry atmospheric pollution, characteristic of these plants, away from the main urban built-up area.

The remaining industrial establishments in this district are distributed mainly in the north and east of the Petromin Industrial Estate (see Fig.5.2). Most vehicle repair industries are concentrated in this area, together with other types such as those dealing in machinery and equipment, wood products, furniture making and soft drinks. Here, the proximity of the market, road facilities and large and cheap areas of land were all advantages available when these plants were set up. The area is also close to the port. In the past the location was suitable since it was away from the residential area, but urban growth has crept towards the east and south and surrounded the area, and its location is no longer satisfactory in land use zoning terms.

2. Central District

This area is characterized by the concentration of some specific small industrial establishments, such as tailors and small flour and coffee mills. Tailors are distributed throughout the CBD, whilst small flour and coffee mills are concentrated only in the eastern side of the CBD, in Bab Makkah where land is cheaper than on the western side, for example. This area also includes other types of industries such as machinery repair works, printing, an oil mill and bakeries. The CBD once contained many more industries but owing to the ever increasing demand for housing and the very high land values compared to other parts of the city, many industries have moved to the outer zones. The CBD has the advantage of the proximity of customers where there is the greatest concentration of people during daylight and evening hours, particularly relevant where small industries sell direct to end-users. In addition, linkages with other industries or service

functions found in the CBD were of importance. These factors have also led to small industrial establishments being located in the other areas of commercial development particularly in the outlying business centres.

3. Northern District

The industrial structure of the area is diversified. Leading industries are building materials, metal work, foodstuffs, wood products and furniture making. These industrial establishments are either newly-established or have transferred from the inner part of the city and erected on larger plots of land in cheaper areas. Many industrial establishments, such as building materials, were set up here because of the good accessibility by road to raw materials such as those from the cement factory. Cement products and other building material are heavy and large in bulk and these industries handle great quantities of raw materials of low value in relation to bulk. The location of such plant along a main road is held to minimise transport costs both of raw materials and of finished products. The main highway between Jeddah and al-Medina and Jeddah-Makkah highway provide the transport infrastructure for these industries (see also Chapter 8). In addition, other important urban roads link this area with other parts of the city. The availability of further plots of land to the north of this district will also be useful for further extensions.

The major handicap of this area results from atmospheric pollution carried by the prevailing northerly winds over the city centre. In addition, the area is located far from the residential areas most attractive to industrial workers, i.e. the inner and southerly sections of the city where rents are much lower than in the northern parts of the city (see also Chapter 7). Here to, company and public transport has had to be provided for the journey to work.

Conclusion

The industrial function of Jeddah plays an important role in the economy of the city. Industrial development in Jeddah, as well as the Kingdom, has taken place since the early 1960's. Before this the industrial structure in the whole of the Kingdom was dominated by small establishments most of which concentrated on handicrafts.

Since 1973, industry has greatly developed throughout the Kingdom, due to the large increase in the oil revenues, government encouragement of the industrial sector and the availability of foreign and Saudi capital. These together with the growing demand for manufactured goods have contributed enormously to the recent industrial development. There was and still is a shortage of skilled and non-skilled labour available. Most of the raw materials supplied to most factories were, and continue to be, imported. Inadequate water supply is also one of the obvious problems observed in all the factories studied.

However, despite these problems, many new industries, both large and small, have been set up. Most of the large and modern industries have been established in the government sector which has the ability to finance large establishments. Even more important is the fact that public sector industrial investment has increasingly become a matter of national development policy. In the early stages, as reflected in oil refining, Jeddah was regarded as the location from which the Western Region as a whole, as well as the city's urban population, could best be served. More recently, as noted below, basic public sector industries such as the car-assembly plant, however, continue to carry forward the local momentum in manufacturing and although, as has already appeared

and is further analysed in the conclusion, Jeddah is not primarily an industrial town, it is and is likely to remain for a long period the most important industrial city in the Kingdom.

Most industrial establishments were designed to meet local demand rather than export, but present industrial output is still insufficient to meet local demands. There is still a shortage in most industrial products such as cement, textiles, confectionery, fish and metal.

Industrial establishments are scattered throughout the city but large establishments are mainly located in the outer zone of southern and northern districts which have the advantage of available cheap land, raw materials, highway facilities and port facilities. The small establishments are scattered throughout the urban area mainly for the proximity of consumer and market.

Recent industrial development by both public and private sectors has contributed greatly to multi-sectoral economic activity in the city. It must be noted, however, that virtually all basic public industry established during the 1980's and planned for the future will be located away from established urban centres. For Jeddah this in particular means the growth of Yanbu, 350 km to the north, as a potential future rival in this respect.

CHAPTER 5

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CHAPTER 6

SERVICE FUNCTION

The service function, as has been implied in previous chapters, is of central importance to the life of Jeddah. Both public and private sectors are involved in service function activities except for administration which is wholly governmental and for some of the public utilities.

The first section examines Jeddah as a regional centre and also its national role as the location for international diplomatic representatives. The second section studies all levels of education services from kindergarten to higher education as well as vocational, adult education and education for the handicapped. The number of students, teachers and buildings are used as indices for evaluation of educational development in the city. The third section deals with health services, including all levels of these services in the city. The number of health establishments, health personnel and number of beds are used as indices to evaluate the development of health services in the city. The fourth section studies electricity as a public utility, water services having already been discussed in some detail in previous chapters. Production levels and the number of consumers are used as indicators of development. The fifth section deals with Hajj facilities in the city, as Jeddah is the main reception centre for pilgrims in the Kingdom, together with the urban religious centres - the mosques. The last section of this chapter studies recreation and other public amenities, including public gardens, open spaces, hotels, restaurants etc.

The Administrative Function and Jeddah's Position in the General Administrative Hierarchies

The administrative system in Saudi Arabia has a pyramidal nature, where administrative units are graded in importance and level of administration. Since 1963 the country has been divided into eighteen

Emirates or Provinces (Fig.6.1). Each Emirate consists of a number of settlement centres and municipalities varying in their size and importance. For some planning and administrative purposes these Emirates are also grouped into five major regions (Western Eastern, Northern, Southern and Central). (Fig.6.2).

Jeddah is located within Makkah Emirate which in turn consists of 23 smaller lower order districts, in addition to a large number of different sized towns and cities. According to the 1962 census, Makkah Emirate was the largest in population, including as it did the city of Makkah, Jeddah and Al-Ta'if although not the largest in area. Makkah Emirate is the political administrative agency for a large part of Western Saudi Arabia extending from Rābigh in the north-west to Al-Berk in the south-west and to the east as far as al-Defena (Fig. 6.3).

The function of the Emirate of Makkah, which is headed by an amir (governor), is mainly political and regional, concerned with solving problems which occur between citizens and to guarantee the rights of individuals within its boundaries. This does not include direct responsibility for the provision of social and public services which are the responsibility of separate ministries and government agencies each concerned with its own sectoral activities and plans for future progress. However, the Emirate Office co-operates with the provincial council and the representatives of various ministries to ensure health protection, and raise standards e.g. of medical services, promote education and attend to matters of irrigation, communication, labour, trade industry, and municipal affairs. In this context the municipal and water and sewage departments of the Emirate of Makkah are under the supervision of the Ministry of Municipalities and Rural Affairs which is responsible for essential services such as water supply, rain water and storm water drainage, sewage disposal, sanitation services, general

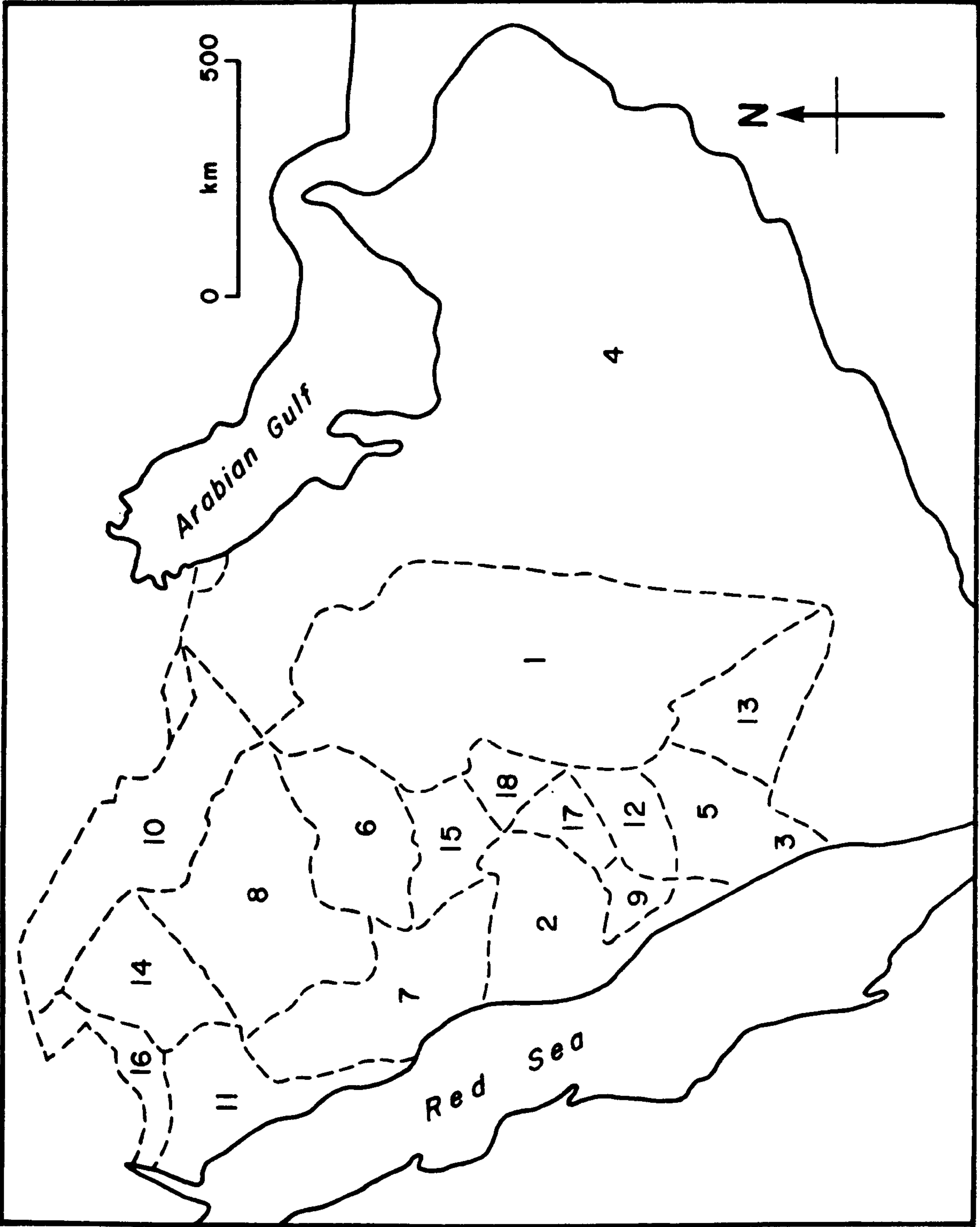
markets for fish, vegetables and meat. In addition, municipal departments are responsible for the construction of some roads within the cities beautification of urban and rural areas, the building of parks and playgrounds and the designing of residential areas and public buildings. (1) The effective headquarters of Emirate administration is located in Jeddah rather than Makkah after which it is named, and only a sub-office is to be found in the city of Makkah headed by a deputy amir. The city of Jeddah is effectively the capital of the Emirate of Makkah.

Apart from this political function, the city of Jeddah, for a period during the summer months, acts as the national capital during the movement of the cabinet from Riyadh to al-Taif, the summer capital. During this period the cabinet meets regularly in Jeddah and all government announcements and decisions during their stay are made there.

Jeddah, as the second largest city in the Kingdom, comes second only to the capital Riyadh regarding its administrative importance and acts as the administrative capital for its region. So, all the activities of government offices in the Emirate of Makkah are handled in the first place at Jeddah. For example, educational administration dealing with, for example, the number of schools required for all cities and towns within the Emirate's boundaries, teacher assignment etc. have to be dealt with first at Jeddah and only later at Riyadh.

Apart from this administrative function of Jeddah, in the Emirate structure, the city contains all the national government agencies' headquarters except the police, for whom the headquarters is located in Makkah. In addition to these government headquarters, Jeddah is the headquarters for other institutions such as Saudi Arabian Airlines (Saudia) and the Saline Water Conversion Corporation, as well as other social organizations (for more details on Jeddah's administrative

Fig 6-1 Major Emirates of Saudi Arabia

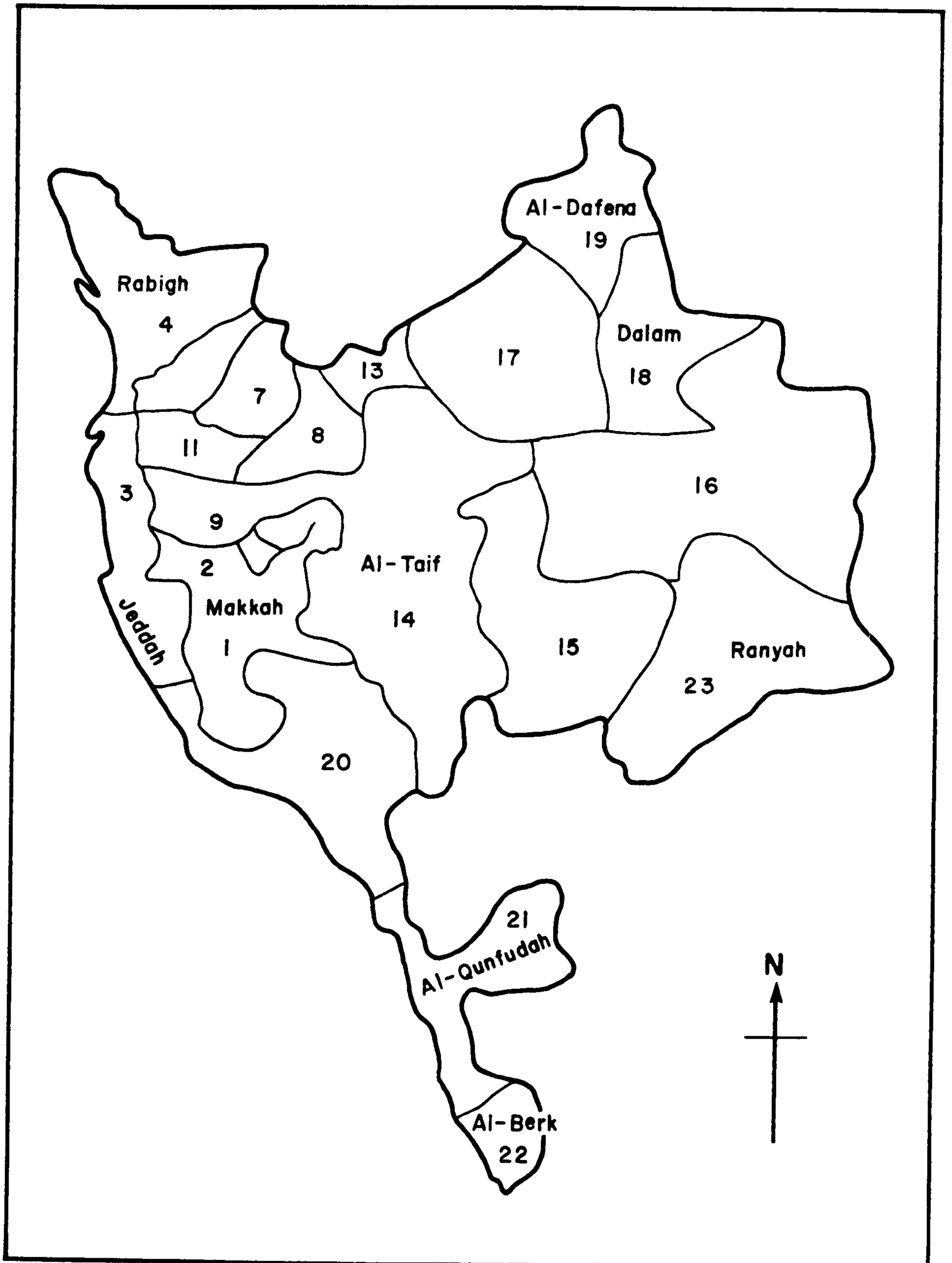


Source: Population Census 1962

Fig 6-2 THE FIVE MAJOR REGIONS OF THE KINGDOM



Fig 6.3 Makkah Administrative Area and Sub-District, 1974



Source: Population Census 1974

status see the following Chart).

The Administrative Functions of Jeddah

<u>Makkah</u>	<u>Government Ministries</u>	<u>Other Government Agencies</u>
Headquarters	1. Foreign Ministry H.Q	1. Saudi Airline H.Q.
Office	2. Western Regional	2. Western Regional Offices
(sub-office at	offices of other	e.g. of SWCC, SAAB etc.
Makkah)	Ministries	

Diplomatic Function

The political administrative function summarily reviewed above can be considered to be both an internal function serving the people of the city and also its regional hinterland. The diplomatic function, which is a specified element of the administrative function has broader implications since all foreign diplomatic international representation, until very recently, was only allowed to be located in Jeddah. Whilst, strictly Jeddah was only the location of foreign embassies, consulates etc., their presence in the city had direct consequences for many of the city's functions. The trading and business community had direct access to foreign commercial attaches, for example, and the diplomatic quarters made various demands on city services. Jeddah was known as the town of consuls because at the time when Jeddah was playing host to foreign consuls most of Arabia was strictly off-limits to non-Moslems.

The first nations ever to have consulates in Jeddah were France and Great Britain. They had established consulates by 1825 for two main reasons. First, for trading purposes where Jeddah was considered to be a connection point between east and west, and on the other hand Jeddah supplied the Hijaz region with all its imported goods.

Both Britain and France had citizens and colonial subjects living in Jeddah at that time so having consulates in Jeddah was very necessary

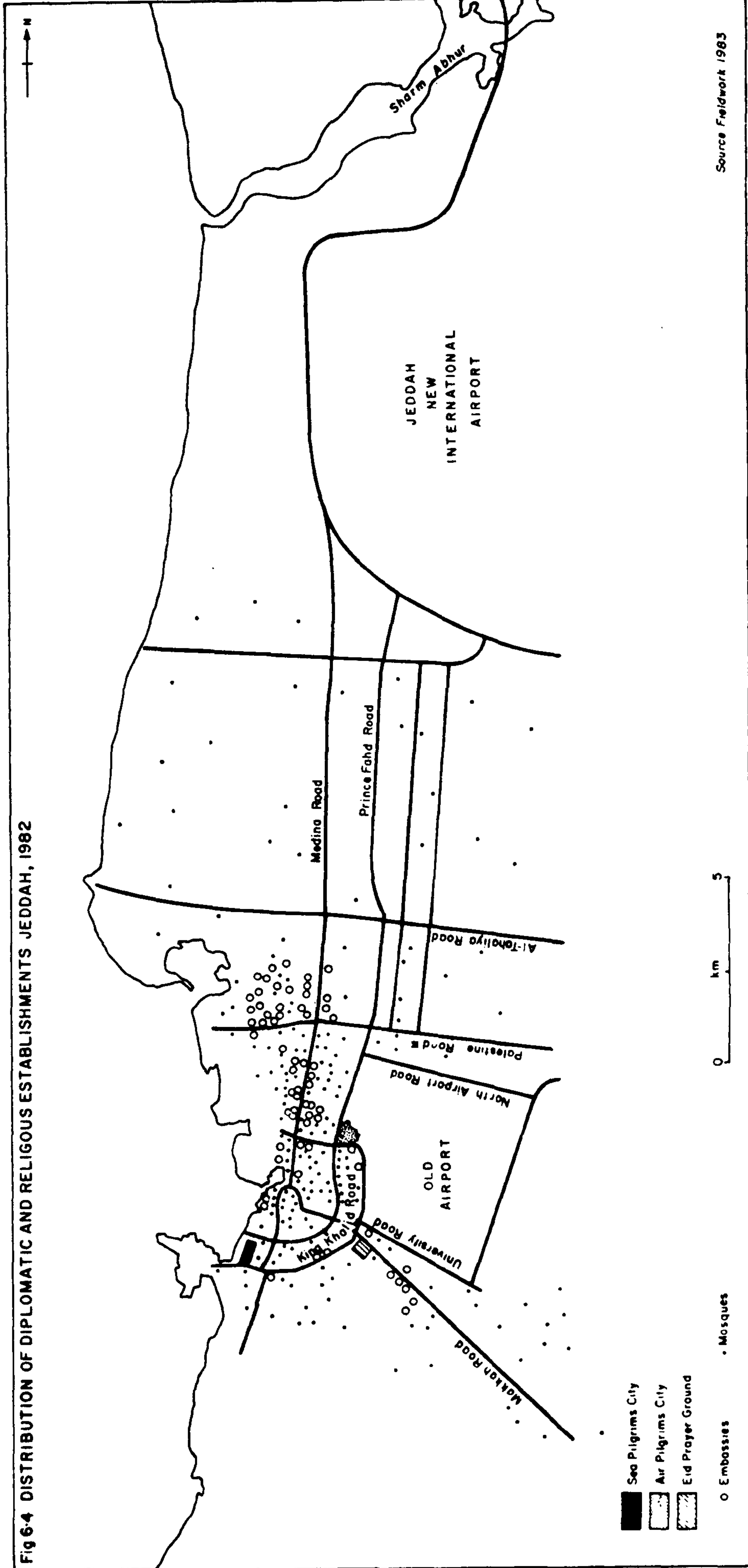
to protect both trade and people. Holland followed somewhat later and on a temporary basis, sending each year a consular officer to protect and assist those of its Moslem subjects from the Dutch East Indies who poured into Jeddah in their thousands in the pilgrimage season. By 1910 there were 8 consular representatives in Jeddah. ⁽²⁾ At this time all consulates were located in the northern part of the present C.B.D. where large houses were available (Fig.2 9).

The USSR was one of the first countries to recognise Abdulaziz as a King of Najd and Hijaz in 1926, but its mission was closed in 1938 owing to irreconcilable ideological differences between the two states. By 1936 there were 10 missions and 3 consulates in Jeddah. ⁽³⁾ By 1953 there were 23 embassies and legations in Jeddah, most of these legations now having become embassies. The number has been steadily growing ever since, and today Jeddah, which has become the diplomatic capital of the Kingdom, accommodates 73 establishments scattered throughout the city, particularly in the north where 53 of the total number of embassies are located, 85 per cent of the total (see Figure 6.4).

All the embassies are attached to the Ministry of Foreign Affairs whose head office is located in Jeddah rather than in the national capital, Riyadh, since historically, foreign missions have always been based in Jeddah. The Ministry of Foreign Affairs together with all embassies will however shortly be moved to the National capital, Riyadh.

Work on the new diplomatic quarter at Riyadh is due to be completed by 1985. Despite this, Jeddah will remain important in this and other associated contexts, as has been discussed in the earlier chapters of this thesis since the headquarters for all consular business will remain in Jeddah to serve the whole Western Region together with the Northern and the Southern Provinces, in all composing the most populated area in the Kingdom.

Fig 6-4 DISTRIBUTION OF DIPLOMATIC AND RELIGIOUS ESTABLISHMENTS JEDDAH, 1982



Education Function

The education function is one of the most important functions in any city and appears to have especial significance in the context of development planning, national and regional, by a Kingdom with large revenue resources for development. Not only is trained productive manpower a critical need but a large number of educated people are required to implement such massive plans.

Educational services before the creation of the state of Saudi Arabia were backward and confined to some personal initiatives taken in some major cities such as Jeddah, Makkah and al-Medina. Cooperation between some Muslim scholars and a few local people was based on the objectives of teaching the Koran and the elements of reading and writing (see Chapter 2).

Educational services at the early period of the new state was very limited as a result of the very low revenue of the Kingdom even after the creation of an Education department in 1924. Thus high rates of illiteracy were registered throughout the country. According to the Central Department of Statistics' official sample survey even in 1966 83 per cent of the total population in the Kingdom was illiterate. Illiteracy was especially high among the female population reaching 95.6 per cent compared with 70.1 per cent for the male population. In this context Jeddah had a lower percentage of illiterates than the rest of the Kingdom with only 58 per cent (see Table 6.1). This difference is mainly a reflection of the far greater cultural exposure and a degree of cosmopolitanism in Jeddah than in the rest of the country (see Chapter 3).

Table 6.1 Illiteracy Status of Population in Jeddah 1966-1978

Year	Percentage of the total population		
	Male	Female	Total
1966	49	72.9	58
1974	36	58	44.8
1978	23	48.7	33

Sources : a) Central Department of Statistics, Ministry of Finance and National Economy.

b) Population Census of 1974

c) Sert Jackson International/Saudconsult 1978

Jeddah also had a better record than the neighbouring city of Makkah which had 61.3 per cent illiterates in its total population in 1966. From Table 6.1 one can see that there has been a great improvement in literacy in the city. For example, by 1974 the percentage had declined to 44.8 per cent. In the succeeding four year period this percentage decreased further to 33 per cent in 1978. The same table shows that illiteracy status in females remains higher than among males, even so literacy among females is improving, if we compare the statistics for 1966 with those of 1978. This can be attributed to the fact that the state has enforced compulsory education for all children of primary school age, in addition to expanding in all education levels as we will discuss in the following section.

Growth of Education up to 1962

From the previous section we have seen that education services were backward long after the creation of the Education Department. For example in 1953 Jeddah had only 15 Primary schools consisting of 1,761 students, one industrial school with 135 students and 2 adult schools with 40 students. There was no intermediate or secondary school in

existence in Jeddah, but there were a few classes for both levels attached to the primary schools, with no more than 50 students for both levels.⁽⁴⁾

The initial step to overcome the educational problem in the city and in the Kingdom as a whole came in the same year, 1953, during which the Ministry of Education was created. After that educational institutions and services started to grow slowly in early stages and then more rapidly later as Tables 6.2, 6.3, and 6.4 show.

By 1962 the number of primary schools in Jeddah had increased to 20 with 7,627 students and 263 teachers. At that date 4 intermediate schools with 777 students, and 3 secondary schools with 679 students were to be found in Jeddah. In addition to this there was an intermediate commercial school with 123 students and a night secondary school for those who could not attend during day time with 136 students. Adult education also grew and the number of schools grew to 16 with 1,437 students. In addition to these schools, which were the responsibility of the Ministry of Education, two other Ministries controlled some vocational and training centres. The first was the Ministry of Defence which was in control of 3 training schools; the Saudi Royal Air Force School established in 1952, the Paraforce school established in 1961, and a Saudi Arabian Airline school. The second was the Ministry of Health which had two schools, the School of Nursing established in 1961 and the Institute of Hygiene established in 1962.⁽⁵⁾

In 1962, girls' education was backward compared to male education since their official education only began in 1959-1960, much later than male education. However as always in Jeddah, private participation was an important factor. For example, there were 9 private girls' schools with 1,832 students, in contrast to the 3 state schools with 1,727 students.⁽⁶⁾ However, girls' education since then has improved greatly in terms of schools, teachers and students as examined below.

It is true that educational institutions and services increased since the creation of the Ministry of Education in 1953 but the most important growth took place since the late 1960's. The following section will be devoted to discussing the growth of education services in terms of schools, classes, pupils and teachers at the three levels of primary, intermediate and secondary education for both male and female .

Growth of Education post 1962

As noted in Tables 6.2, 6.3 and 6.4 there was a great increase in the number of schools, classes, pupils and teachers in the mid and late 1960's. This increase was especially dramatic at all education levels after 1973. The Ministry of Education's national budget grew from Million SR 227.5 in 1963-64 to Million SR 968 in 1973-74, and by 1980-81 to Million SR 6,976.5. The Directorate General of Girls' Education budget has risen from Million SR 25.2 in 1963-64 to Million SR 307 in 1973-74 and 1980-1981, Million SR 2,739.8.⁽⁷⁾ In Jeddah, now, all levels of education are available from kindergarten up to higher education, and these stages of education in the city will now be discussed in some detail, taking boys' education first and then that of girls. The only mixed level is at kindergartens.

Kindergartens

Government kindergartens are available on a very limited scale, not only in Jeddah but in the whole Kingdom. At this stage children over the age of 4 are generally admitted and taught for two years, after which children can attend primary school. In 1978-79 there was only one government kindergarden under the control of the Directorate General of Girls' Education (boys and girls are mixed) with 67 students and 5 teachers. By 1981-1982 there were 22 private and government kindergartens with 6,166 children and 130 teachers.⁽⁸⁾ This increase

was mainly in the private sector which represents 82 per cent of the total number of kindergartens in the city. About 56 per cent of private kindergarten classes are found attached to a small number of private primary schools with the sole motive of profit making.

Primary Education

Primary education comprises six grades from children of 6 years old upwards. The completion of the course entitles students to enter an intermediate school. The major problem facing this stage of education was, and still is, finding proper buildings for such an important function since most primary schools still occupy rented houses which were not designed as schools. As a result they lack playgrounds, sports grounds, ventilations, space, light and convenience. To solve this problem the government education agencies have conducted an extensive school construction programme. The fastest way to achieve this goal was to utilize prefabricated systems in those parts of the city where land was available but prefabricated systems lack some important services, in addition to the disadvantage of their short-life expectancy. Some new precast schools of better quality and longer durability are under construction to replace the old ones. Another major problem is the unavailability of suitable land on which to build schools. This is particularly bad in the old quarters where plot-sites are either not available or too small to meet the standards set by the Ministry of Education which require that the minimum site size for school development should be 80 m x 80 m to 100 m x 100 m.

In the academic year 1966-1967, as noted in Table 6.2, the number of schools increased greatly. Thus, within the 15 years 1966/67 to 1980/81 their number increased by 165.5 per cent, most growth occurring in the period between 1974/75 and 1980/81 along with a general increase

in expenditure for educational purposes. The average pupils per school in 1966-67 was 310, whilst in 1980/81 this increased to 332. The number of classes increased by 220.8 per cent during the 15 year period.

The average number of pupils per class fell from 31.2 to 27.7 respectively. This meant that there was an improvement in the pupil: class ratio, the best measurement for the development of education.

The number of primary school teachers has also increased steadily as shown in Table 6.2. The pupil-teacher ratio was 26.2, 27 and 24.9 respectively, compared with 19.7 as the national average in the Kingdom in 1974-75.⁽⁹⁾ However, in Jeddah it is comparatively large compared to the national level, but signs indicate that there is always a slow downward trend in the ratio.

Table 6.2 Primary Education in Jeddah 1966-1980 (Males)

Academic Year	Number of schools	Number of classes	Number of pupils	Number of teachers
1966/1967	58	576	17,985	686
1968/1969	59	598	21,130	734
1970/1971	60	753	25,008	841
1972/1973	67	929	30,240	1,117
1974-1975	91	1,156	37,223	1,492
1976-1977	180	1,591	44,920	2,015
1978-1979	137	1,618	45,778	1,782
1980-1981	154	1,848	51,141	2,051

Source : a) Director of Jeddah Educational District 1975, p.27

b) Ministry of Finance, Statistical Year Book
Volume Numbers 15, 16 and 17.

Intermediate Education

This stage is considered as the first phase of general education. After primary school, pupils can attend this level for three academic years, though the entry age should be around 12. From there students are eligible for admission to secondary, vocational or teacher training schools. Some of the students go for these choices, others leave for employment.

The number of schools has increased greatly as shown in Table 6.3 with 377.7 per cent of this increase in just 15 years. The average number of pupils per school was 390 in 1966 and 350 in 1980. Such an increase in the number of schools was coupled with a remarkable increase in the number of classes, as shown in Table 6.3. This resulted in the decline in the ratio of pupils per class from 38.6 in 1966-67 to 30 in 1980-81. The number of teachers in intermediate education increased from 174 in 1966-67 to 373 in 1972-73 and 786 in 1980-81. The student-teacher ratio was 38.6, 18.5 and 19, compared with 17.4 as the national average in 1974-75.

One can see that an important growth of intermediate education has taken place since 1973 in terms of the number of schools, classes, pupils and teachers. At the same time some improvements have taken place concerning educational services, such as equipment, furniture, playgrounds and buildings; nevertheless, this stage of education is still suffering from the shortage of school buildings.

Table 6.3 Intermediate Education in Jeddah 1966-1980 (Males)

Academic Year	Number of schools	Number of classes	Number of pupils	Number of teachers
1966/1967	9	91	3,513	174
1968/1969	14	124	4,379	233
1970/1971	15	149	4,925	269
1972/1973	19	193	6,888	372
1974/1975	23	277	9,123	458
1976/1977	32	359	11,556	565
1978/1979	39	466	15,096	703
1980/1981	43	500	15,057	786

Source : Calculated from

- a) Directory of Jeddah Educational District 1975,p.27.
- b) Ministry of Finance, Statistical Year Book
Volumes 14, 15, 16 and 17.

Secondary Education

Secondary education consists of a three year course. Pupils attend secondary school for a first year when both science and arts are taught; from the second year onward students make a choice between either sciences or art courses. When we compare the number of schools and pupils at this stage with the primary or intermediate stage one can see that their numbers are much smaller than the other two stages. This can be attributed to the fact that some students from both earlier stages (primary and intermediate) go on to vocational schools or into employment.

The number of students and schools in secondary education has increased steadily as shown in Table 6.4. The ratio of students to schools was 326 in 1960 and 458 in 1980, compared with the national average of 200 in 1974-75, reflecting a shortage of school buildings relative to demand in Jeddah.

Table 6.4 Secondary Education in Jeddah 1966-1980 (Males)

Academic Year	Number of schools	Number of classes	Number of pupils	Number of teachers
1966/1967	4	37	1,305	70
1968/1969	4	50	1,747	91
1970/1971	5	63	2,214	109
1972/1973	6	85	2,746	154
1974/1975	7	116	3,751	242
1976/1977	8	127	3,914	242
1978/1979	11	192	5,772	319
1980/1981*	15	237	6,880	359

Source : Calculated from

a) Director of Jeddah Educational District 1975,p.27.

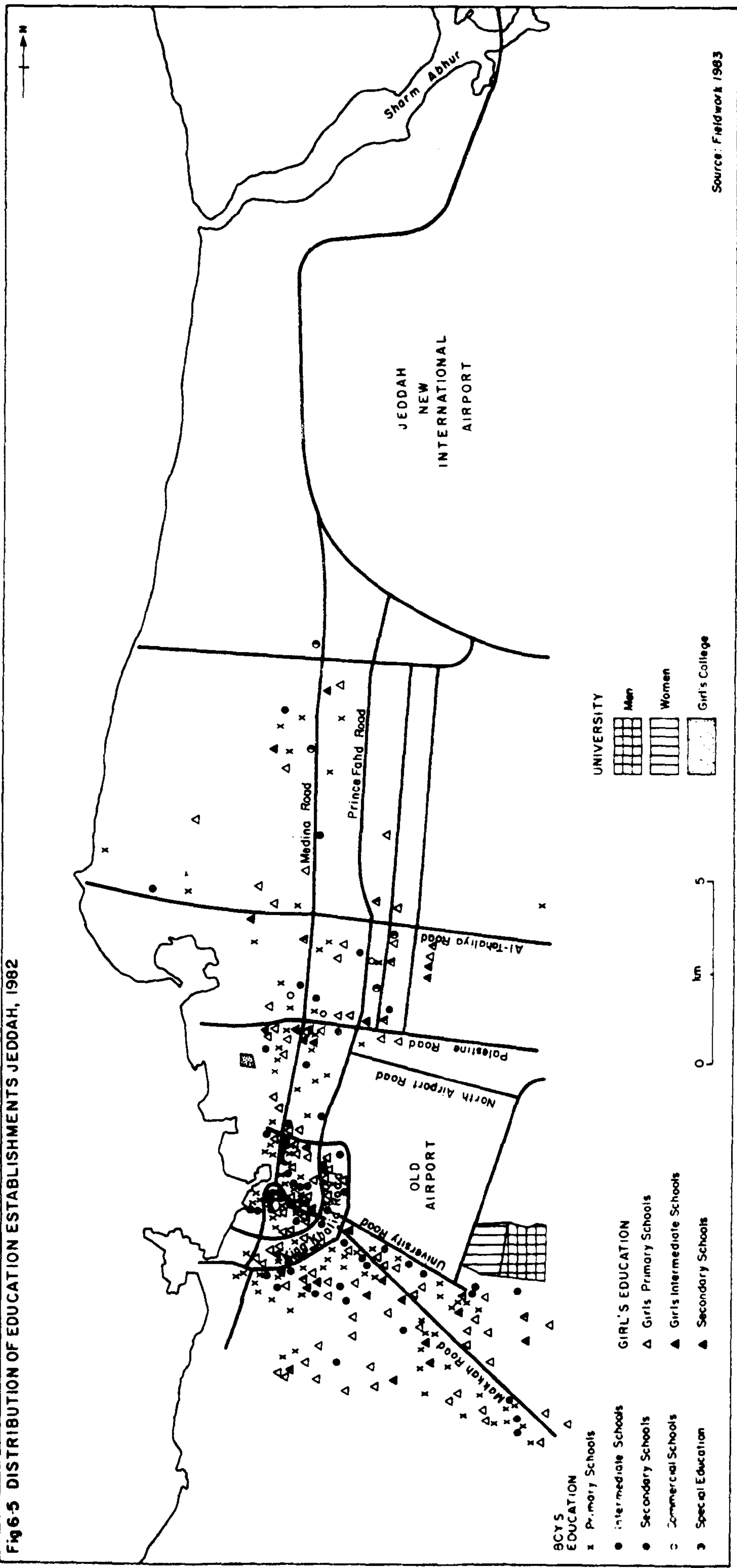
b) Ministry of Finance, Statistical Year Book
Volume Numbers 15, 16 and 17.

* including one comprehensive secondary school

The number of teachers in secondary education increased from only 70 in 1966-67 to 154 in 1972-73 and to 359 in 1980-81. The student teacher ratio was 18.6, 17.8 and 19 respectively, compared with 18.6 as the national average in 1974-75. The increase in the number of enrolled students was more than matched by the increase in the number of classes so that class size fell. In 1966-67 average class size was 35 students per class decreasing to 29 in 1980-81. It is worth noting that all secondary schools in Jeddah are in government owned, purpose-designed buildings; a different situation from the primary and intermediate schools where most schools occupy rented premises. (Distribution of schools in all levels is shown in Fig.6.5).

The study carried out by the Directorates of Education of the Western region in 1978-79 to measure the cost of student education in the Western

Fig 6-5 DISTRIBUTION OF EDUCATION ESTABLISHMENTS JEDDAH, 1982



Source: Fieldwork 1983

region,⁽¹⁰⁾ shows the cost per student in Jeddah is lower than that in Makkah or al-Taif. The average cost of the student in the primary school in the Western region was SR 5,550, whilst in Jeddah it was SR 5,058. For purposes of comparison, Makkah has the highest with SR 6,060 and al-Taif SR 5,837. At the intermediate stage Jeddah also shows the lowest cost level per student in the Western region, SR 6,289, compared to SR 6,952 for the whole Western region, al-Taif at this stage being the highest with SR 7,668 and Makkah with SR 7,106. The average cost per student in secondary education in the Western region was SR 5,388; Jeddah still has the lowest average with SR 4,551, whilst al-Taif still represents the highest average with SR 5,650 and Makkah with SR 6,126. The fact that the cost per student in secondary education (SR 5,388) was lower than that of the students both in primary education (SR 5,550) and at the intermediate level (SR 6,952) is because students in primary and intermediate education benefit from free meals which cost an average SR 1,190 for each student each year.

Male vocational education in Jeddah includes commercial, industrial and teacher training. These institutes used to accept school leavers from primary schools, but now only graduates from intermediate stages are accepted. The purpose behind this was to improve the standards of education. Even so, in 1980-81 there was only one industrial school with 12 classes, 291 students and 53 teachers. This type of education is very important in Jeddah, which is the leading industrial city in the Kingdom and in which there is a great shortage of industrial labour. More encouragement should be given to attract more students, since the number of students trained is still very far below actual needs.

Commercial education has witnessed remarkable changes in terms of students, classes and teachers. For example in 1975-76 there were 2 commercial schools which contained 16 classes, 270 students and 29 teachers. In 1980-81 schools still number the same, but they enlarged

to contain 33 classes, 828 students and 66 teachers. The reason behind the enlargement of such education was to meet the increasing demand for employees in business offices, companies and banks.

Teacher training education is very important at present to meet the great demand of teachers in kindergartens, primary, intermediate and secondary schools. In contrast to commercial institutes, the number of classes, students and teachers have declined from 28, 843 and 44 in 1977-78 to 12, 323 and 20 in 1979-80 respectively. This great decline requires quick action to correct this trend.

It is clear from the above mentioned facts that vocational education is still limited in terms of the number of schools, students, and teachers, compared to the size of the city and its increasing industrial, administrative and educational importance requiring more and a greater range of vocational education. It is also noteworthy that notwithstanding the increased national budget for education there is a shortage of secondary schools. This appears to be characteristic of all the major cities and in Jeddah certainly is a measure of the rapidity of the growth of the urban population.

Girls' Education

Girls' education, which is quite separate from that of boys, is the responsibility of the Directorate General of Girls' Education, established in 1959-60. The Directorate's objective is to educate a young woman in a sound Islamic way so that she can fulfil her role in life as a successful housewife, ideal wife and good mother, and to prepare her for other activities that suit her nature such as teaching, nursing and medicine. Girls' education developed slowly at first but as people's suspicions declined and they started to trust the policy of the government towards girls' education there came a rapid increase in student

admissions. For example, there were 311,000 students in the Kingdom in 1975, which increased to 585,000 in 1982. ⁽¹¹⁾ As noted earlier the number of private schools is very high and in some periods was higher than that of government schools, but latterly government schools, particularly since 1973, have increased. In 1972-73 the number of primary schools increased from 50 to 80 in 1978-79 and to 99 in 1981-82. This gives averages of 404.7, 441.3 and 444.6 students per school, or 40.7, 31.8 and 30 students per class respectively.

The number of primary schools' lady teachers has also increased steadily, as shown in Table 6.5. The student-teacher ratio was 32.6, 25.0 and 22.4 respectively. From this one can see that there is always a decline in the student-teacher ratio which represents better education quality.

The intermediate stage witnessed great increases in student numbers since the early 1970's, as shown in Table 6.5. The ratio of students to school was 309, 561.7 and 466.5 respectively. The ratio of student to class was 32.5, 29.5 and 30.6 respectively. The increase in the number of students and classes has not been at the expense of increase in the number of teachers, as noted in Table 6.5. In general, the student-teacher ratio was 21.3 in 1972-73, 19 in 1978-79 and 20 in 1981-82.

Although there has been a substantial increase in secondary education, it was less than that of the intermediate stage. This can be attributed to the fact that some of the students finishing the intermediate stage go directly to teacher training institutes. However the number of secondary schools, as well as the number of students, has increased remarkably, as shown in Table 6.5c. In fact, the implied increase in the number of students was matched by a corresponding increase

Table 6.5

Girls' Education

A Primary Education 1972-1981

Academic year	Number of schools	Number of classes	Number of students	Number of teachers
1972-73	50	497	20,239	620
1978-79	80	1,110	35,309	1,411
1981-82	99	1,466	44,024	1,959

B Intermediate Education 1972-1981

1972-73	12	114	3,710	174
1978-79	18	342	10,112	529
1981-82	29	442	13,529	675

C Secondary Education 1972-1981

1972-73	4	38	1,154	64
1978-79	9	108	3,643	212
1981-82	16	238	6,603	418

Source : Directorate General of Girls' Education
Western Region (Government and Private)
1972-1981 Jeddah.

in the number of classes, as noted in Table 6.5c. The number of students per class was 30 in 1972-73, 33 in 1978-79 and 22.7 in 1981-82. Although there was a great increase in the number of classes in 1978-79 the ratio of students per class was higher than the previous period. This was a result mainly of the great increase in the student numbers in this period. As might be hoped, the increase in the number of secondary students and classes has been paralleled by the growth in the number of teachers. In general, the student-teacher ratio has shown a downward trend from 18 to 17 and 15.7 in 1972/3, 1978/9 and 1981/2 (for schools distribution see Fig. 6.5).

In addition to general education for girls there are some specialised education institutions: one Koranic school at primary level accepts students at 6 years of age; a tailoring centre established in 1973-74, accepts students from the age of 16 to 25. After the completion of a two-year course the students hold certificates which enable them to participate in any kind of textile industries. In 1980-81, there were 13 classes with 147 students and 9 teachers. Third, and particularly important is the teacher training institute which accepts holders of intermediate stage certificate. This has solved the problem of the shortage of teachers in the city in that by 1981-82 all lady teachers in primary schools were Saudis. In 1981-82 there was only one teachers institute in Jeddah with 13 classes, 373 students and 44 teachers. Finally, the government institute for nursing was established in the early 1960's and by 1981/82 had 18 students, 2 classes and 12 teachers.⁽¹²⁾

It is clear now that an important growth in education in Jeddah has taken place all over the education stages in terms of schools, classes, students and teachers. However, some problems still exist, such as the shortage of government school buildings and Saudi teachers, particularly at intermediate and secondary stages.

Higher Education

Higher education in Jeddah consists of King Abdulaziz University and the Girls College. King Abdulaziz University is located east of the CBD (Fig.6.5) and was set up as a private university in 1967-68, this again illustrates how common private benefactions are in Jeddah. It began with only one Faculty of Economics and Administration with only 60 male students and 30 female students but in 1969-70 a Faculty of Arts was added. Thereafter, the university was adopted by the State, according to Cabinet Decree No. 150 issued on August 8, 1971, as a university educational institution of independent legal status. ⁽¹³⁾ The university now comprises 12 Faculties and Institutes, three of which are located in Makkah: the Faculty of Shariah established in 1949-50, the Faculty of Education established in 1962-63 and Arabic language Institute established in 1980-81. Located at Al Medina is a Faculty of Education established 1977-78. However in 1981, a General budget decree was issued carrying with it the separation of the Faculties of Shariah and Education at Makkah and the Arabic Language Institute from K.A.U. These are now grouped in an independent university named Umm-el-Kora University. K.A.U. remains the second most important of the seven universities in the Kingdom.

Since its foundation, the number of university students has grown rapidly as shown in Table 6.6. Thus, within 11 years the number has increased by 4,388 per cent. However, one can distinguish between two stages of development in the expansion of the university during this interval. The period before 1973 which in this context was one of slow development (as was true of other service sectors), but after 1973 a remarkable increase took place, particularly in 1975-76 and 1977-78. This can be attributed, first, to the fact that in 1973-74 a non-regular

Table 6.6 Number of students in King Abdulaziz University, in
the Academic years of 1970/71-1980/81

Academic year	Number of students*			% of females to Males
	Males	Females	Total	
1970 - 71	321	170	491	34.6
1971 - 72	1,468	508	1,976	25.7
1972 - 73	1,739	741	2,480	29.8
1973 - 74	2,982	957	3,939	24.3
1974 - 75	4,586	1,175	5,761	20.4
1975 - 76	7,254	2,732	9,986	27.4
1976 - 77	10,042	3,843	13,885	27.7
1977 - 78	15,156	4,793	19,949	24.0
1978 - 79	14,052	5,424	19,476	27.8
1979 - 80	13,704	5,583	19,287	29.0
1980 - 81	15,328	6,745	22,037	30.6

Source : Central Department of Statistics - Statistical
Year book.

* Includes the number of non-regular students

student system i.e. the admission of part-time students was established in the university to make it the only university in the Kingdom to operate such a system. Secondly, each Faculty required a certain level of grades to be obtained by students from the last year of secondary education. The grades differ from one university to another, but in the above-mentioned period they were lower, particularly in the Faculty of Economics and Administration and the Faculty of Arts.

It is to be noted that the number of female students has increased greatly during recent years, following the great increase in the number of graduates from secondary schools. In addition, some students are enrolled as non-regular students. The distribution of female students reflects the objectives of the government in female higher education as there are no female students in the Faculty of Engineering, Institute of Geology, Institute of Meteorology and Sea Sciences Institute, while their numbers in the Faculty of Medicine have grown from 98 in 1976-77 to 383 in 1980-81 to be higher than that of male students at only 373.

It is worth noting that the greatest number of students is in the Faculty of Arts and Economics and Administration. For example, in 1980-81 their number was 12,126 or 55 per cent of the total students. This is because 1) the grades level of these colleges is lower than the other Faculties such as Science, Medicine and Engineering etc. and 2) personal choice, since both Faculties include several departments. Also, these Faculties are the only Faculties which offer a non-regular student service representing about 45 per cent of the total number of students in both Faculties. Table 6.7 shows the number of non-regular students and the percentage of each Faculty.

Table 6.7 Number of non-Regular Students in K.A.U. by Faculty and Sex in 1980-81

Faculty	Number of Students				Total	%
	Male	%	Female	%		
Economics & Administration	1,324	34.2	196	12.4	1,520	27.9
Arts	2,547	65.8	1,380	87.6	3,927	72.1
Total	3,871	100.0	1,576	100.0	5,447	100.0

Source: Yearly Report, King Abdulaziz University 1980-81, p.80.

In 1980-81, there were 2,825 students from about 58 other countries of the Arab and Muslim world, representing 12.8 per cent of the students in the university. They attend the university free of fees and are given grants from the university in addition to free accommodation and tickets from and to their home.

The increase in the number of students has been brought about by the growth in the number of teaching staff, as shown in Table 6.8. The percentage of Saudi teaching staff to non-Saudi is about 33.6 per cent demonstrating that King Abdulaziz university, as are so many other national institutions, is suffering from a great shortage of trained manpower. The university's policy was, and still is, to send students abroad for higher degrees, but the development of postgraduate studies is expected more effectively to increase the percentage of Saudi teaching staff in the near future. For example, between 1980-81 there were 639 students studying abroad in addition to 785 in K.A.U. departments.

Other problems still exist, particularly a shortage of buildings. This has been partly solved by prefabricated buildings which have a short life span. There is also an inadequacy in some existing facilities,

Table 6.8 Teaching Staff in K.A.U. By Nationality and Sex 1970-1980

Academic Year	Saudi			Non-Saudi			Grand Total
	Male	Female	Total	Male	Female	Total	
1970-71	9	6	16	26	17	43	59
1971-72	41	6	47	99	30	129	176
1972-73	60	8	68	110	46	156	224
1973-74	93	15	108	156	66	222	330
1974-75	136	15	151	196	79	275	426
1975-76	133	18	151	312	83	395	546
1976-77	124	20	144	456	121	577	721
1977-78	262	58	320	544	133	677	997
1978-79	300	88	388	656	154	810	1,198
1979-80	279	89	368	674	149	823	1,191
1980-81	353	125	478	777	169	946	1,424

Source : Central Department of Statistics. Statistical Year Book.

for example the non-regular system. ⁽¹⁴⁾ Some Faculties suffer from the lack of financial support, shortage of administrative staff and accommodation facilities for both students and the teaching staff.

The second higher education establishment is the Girls' Training College located north of the CBD (see Fig. 6.5), established in 1974/75 to accept graduates of secondary schools to be trained as teachers to fill up part of the gap which exists in the intermediate and secondary stages. The number of students and teachers increased substantially as shown in Table 6.9. The percentage of Saudi students to non Saudi was 85 per cent in 1980-81 while the percentage was very much lower in the teaching staff (37.3 per cent for the same year). There was a decline in some years and this could be related to the number of graduates from the college which was 133 in 1978-79, 119 in 1979-80 and 129 in 1980-81. However, the Girls' Training College is the responsibility of the Directorate General of Girls' Education.

In higher education as a whole, we see that whilst Jeddah, together with Makkah and Medina, serves the whole country west of Riyadh, and that whilst there has been an expansion in expenditure, the relationship between higher education training and the functional needs of the local community is not very strong. Exceptional was the way in which KAU grew around the original Faculty of Economics and Administration.

Adult Education

There were a few early attempts to tackle the problem of adult illiteracy among the adult population, but all of these were very limited, until the Department of General Culture, as a unit of the Ministry of Education, was created in 1954 to take responsibility for all literacy programmes and for the audio-visual aids required by such ministries as those of Defence, Agriculture, Labour etc. for the implementation of

Table 6.9 Number of Students and Teaching Staff in Jeddah Girls' College By Nationality 1974-75/1980-81

Academic year	Number of Students			Teaching Staff		
	Saudi	Non Saudi	Total	Saudi	Non Saudi	Total
1974-75	271	27	298	4	27	31
1975-76	136	27	163	10	54	64
1976-77	121	27	148	11	67	78
1977-78	153	24	177	13	82	95
1978-79	155	32	187	34	103	137
1979-80	207	41	248	63	117	180
1980-81	266	47	313	75	127	201

Source : Girls' Colleges, Department of Planning and Statistics.
Third Statistical Book 1980-1981.

these literacy programmes among the workers. (15)

Adult education is for persons who did not have adequate schooling and are above the age corresponding to the primary stage of education. This education is organised in two stages, a preliminary and supplementary with each stage lasting two years, after which the student can attend the intermediate stage if he or she is a reasonable age.

In Jeddah in 1975-76 there were 81 male adult schools, consisting of 307 classes, 7,405 students and 461 teachers (for both preliminary and supplementary). In 1980-81 the number of schools, classes and teachers decreased to 66, 265 and 243 respectively, whilst the number of students increased to 7,879, increasing the student teacher ratio from 16 to 32. This is reflected by the average of students per class with the average increase from 24 to 29.7 respectively.

Female adult education, separate from that of males, showed a remarkable increase has taken place in terms of schools, students and teachers. For example, their number in 1975-76 was 49 schools, 203 classes, 4,504 students and 196 teachers. This has increased to 66, 525, 9,092 and 513 in 1980-81 respectively. The student teacher ratio is much better here than amongst males. In 1975-76 this was 23 and 17.7 in 1980-81. Adult education is carried on in primary schools during the afternoon with the primary stage teachers as part time workers.

It is noteworthy that the growth in the numbers attending adult education classes in Jeddah reflects a growing desire for such training since all attendance is voluntary.

Handicapped Education

Education for the handicapped in Jeddah is represented by two types of institution. The first is Muahid-al-Aml (Institute of Hope) which educate the deaf and dumb and also teaches them vocations at two stages

of courses, pre elementary and elementary. In 1980 81 there were 2 institutes of this type with 29 classes, 60 teachers and 271 students (185 male, 86 female).

The second type of institute is the "Retardates" which admit children who are mentally retarded. The ages of children in the institute range from 6 to 14. In 1980-81 there were 2 retarded institutes in Jeddah consisting of 23 classes, 176 students (110 male, 66 female) and 42 teachers. (16)

The education service function in Jeddah, as also that of health, has some special characteristics which are significant to other sectoral functions and to the balance between them. Both education and health services have grown particularly rapidly since the late 1950's and in terms of employment, demands for land and other services (directly and indirectly), and of expenditure now form, nationally and in the big cities, very formidable and large areas of activity.

A consideration of the implication of this is deferred to the conclusion of the thesis.

Health Function

Jeddah, until relatively recently has long had all the health problems associated with urban concentration in poor, low technology countries. Two factors associated with location and also with function, traditionally added to the problems. The first of these was the prevalence of malaria. As noted in Chapter 1 periodic rainfall led to the flooding of some city quarters and in these conditions the mosquito, which otherwise found suitable climatic conditions of high humidity and temperature, flourished. The malarial strains were brought in and continuously reinforced by trade-associated visitors and, above all, the Hajj. The second factor was, and is, the Hajj itself. Even

now, and much more so in the past, a very large number of pilgrims arrive from areas of serious and often infectious endemic diseases. Jeddah, as the main port of entry, has always been vulnerable to such disease importation and during the formal period of pilgrimage the situation was made worse by over-crowding and the virtual breakdown of traditional systems of hygiene e.g. water supply and waste disposal. Nutritional standards were generally low and vulnerability to disease was high.

It is not surprising, therefore, that when official and private health agencies were established, their activities in Jeddah grew even more extensively than in the country at large. The first step was the creation of the Ministry of Health in 1953 to cope with the increasing demand for health services as a result of the increasing population and, above all, of wealth. The most useful general indicator of development is the growth of the Ministry of Health budgets.

The Ministry's budget in 1960 did not exceed SR 58,376,000 but this rose to SR 156,522,000 in 1965. This figure rose to SR 582,818,077 in 1973 and then, as with most sections of government expenditure, grew even faster, trebling to SR 1,822,000 in 1979-1980. (17)

In Jeddah, health services are mainly provided by the Ministry of Public Health, but there are other departments and organisations involved. These have their own organisations, staff and budgets, the most important of which are:

- (a) The Red Crescent which takes care of emergency cases.
- (b) The School Health Departments of the Ministry of Education and under the General Directorate of Girls' Education.
- (c) University Health: Service for personnel and families of the University's members, as well as for the public; part of King Abdulaziz University.

- (d) The Municipalities Department is responsible for the construction of potable water and sewage networks, removal of wastes and garbage and combat of insects. This is subordinate to the Ministry of the Interior.
- (e) The Food Control Department of the Ministry of Commerce.
- (f) Ministry of Defence hospital
- (g) National Guard hospital
- (h) The Private Services

These organisations are responsible for all medical services in the city. Great improvements have been made in the available health services, and free medical care is now available in the city, as in the State as a whole. An examination of the development of health services indicates not only the growing sophistication of this key public service but also some of the socio-economic characteristics of the city.

Health Establishments

In this section health establishments will be studied in an attempt to understand their characteristics, distribution, degree of facilities, ownership and growth since the early 1960's up to 1982. There is a great variety of establishments, but they can be classified into four categories : hospital, dispensaries, clinics and others.

Hospitals

Hospitals in Jeddah fall into two categories, government hospitals and private hospitals. The first, run by the State, offer their services freely to all residents of the city and surrounding areas. Government hospitals are run by the Ministry of Health and also by some other ministries such as the Ministry of Defence (Military hospital north-west of the CBD), the Ministry of Higher

Education (University hospital east of the CBD) and the National Guard hospital (Fig. 6.6). Some of them specialize in certain diseases, such as the Eye Hospital, and others are for general needs. The second category consists of the private sector hospitals. The number of these hospitals has increased rapidly, particularly in the past few years as we will see later. This can be attributed to the fact that whilst they charge for their services they also receive financial support from the government.

In 1962, as shown in Table 6.10, there were seven hospitals, five government owned and two private. This increased to 13 in 1974 and included 7 private hospitals. This number further increased to 20 in 1982 and here again the increase was mainly in the private sector where the number of private hospitals increased from 8 in 1978 to 12 in 1982 representing 53 per cent of the total number of hospitals in 1978 and 60 per cent of 1982. This can be attributed, in addition to the government subsidy, to the increased demand on the private services by locals as a direct result of the decline in the quality of medical services offered by government hospitals, especially during the early 1970's. Along with this occurred a rapid increase in population, many organizations importing their own labour forces, offering them health security through private hospital treatment, and the growing attraction of profitable private medicine.

The ratio of population to hospitals can be used as one indicator of the level of Medical Services in the city. The population per hospital ratio in Jeddah in 1974 was 47,434 which is lower than that of the whole Kingdom 78, 794. ⁽¹⁸⁾ But in both cases the ratios were very high compared with those in the developed countries. For example in 1976 West Germany (17,652) France (14,879) and USA (27,951). ⁽¹⁹⁾ It should also be noted all other health establishments in small towns and

Fig 6.6

DISTRIBUTION OF HEALTH ESTABLISHMENTS JEDDAH, 1982

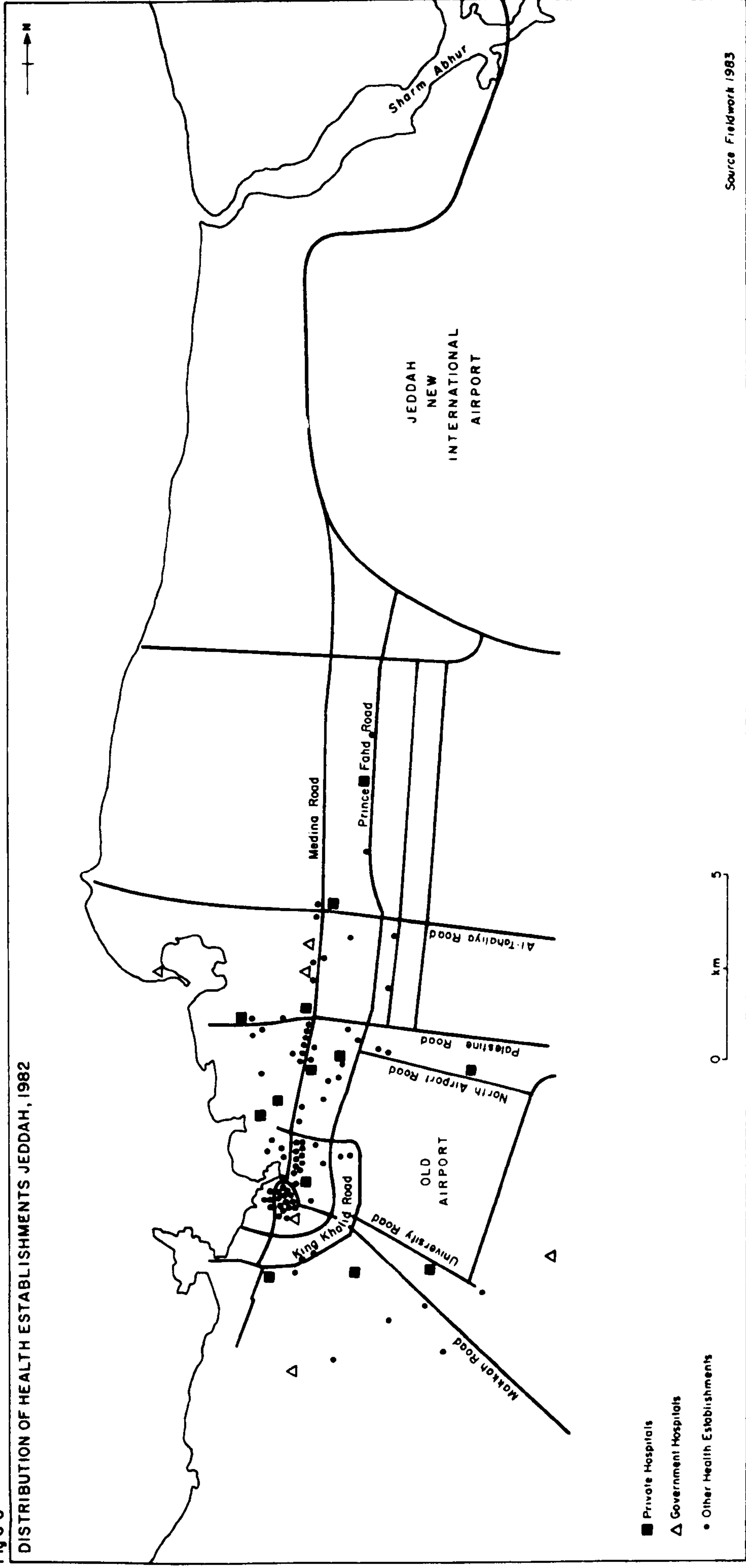


Table 6.10 Hospitals, Beds, And Other Health Establishments Period of 1962-1982

Year	Hospital				Other Health Establishments	
	No. of Hospitals	Population per Hospital	No. of Beds	Population per Bed	No. of Establishments	Population per Establishment
1962	7	29,580	338	438	25	5,916
1974	13	43,785	1,993	286	62	9,180
1978	15	57,490	1,669	517	102	8,455
1982*	20	60,000	3,076	390	166	7,229

Source: Compiled from

- a. Population Censuses of 1962 and 1974
- b. Socio-economic Survey 1978
- c. Statistical Year book 1974, 1978
- d. History of Jeddah (Arabic)
- e. Fieldwork 1982

* Population figures based on the Municipality of Jeddah estimation.

villages are small and under the supervision of unspecialized physicians (general practitioners). In Jeddah City, hospitals therefore not only include specialised departments, consultants and physicians but also have to offer basic medical services not only to people living in the city itself, but also to the population of the other major cities in the Western Region such as Makkah, al-Taif, and al-Medina, as well as to that of adjacent regions such as the Northern and Southern Regions because medical services are much better than those offered by hospitals in those regions. Another important element is that government hospitals in Jeddah also serve not only expatriate residents but also the many illegal migrants who use Jeddah's hospitals extensively at the local people's expense. There is therefore great pressure on the hospitals in Jeddah, which has contributed to a lowering of the standard of their services.

The ratio of beds to population can also be used as an indicator of the level of the potential services offered by hospitals. The number shown in Table 6.10 is extremely low for a city the size of Jeddah and the average ratio of population per bed is higher than that of developed countries, for instance USA (155), France (97), United Kingdom (117) and Japan (95) in 1976, even though the number of beds increased from 338 beds in 1962 to 3,076 beds in 1982. From Table 6.10 one can see that there was, in fact, a decrease in the number of beds between 1974 and 1978, to be attributed to the decrease in the number of beds in hospitals for infectious diseases, from 1,018 to 484. This latter trend was made possible by the improvement in early treatment at clinics and dispensaries (see below).

Here again, the main increase in the number of hospital beds has been in the private sector. For example, in 1978 the number of government hospital beds was 1,338, increasing to 2,031 in 1982, whilst

the number of private hospital beds increased from 331 beds in 1978 to 1,050 beds in 1982, an increase of 217 per cent over 1978.

From the above mentioned facts one can see that there is still a remarkable shortage of both hospitals and beds in the city, which means a great improvement in the medical services is needed to reach the level of health care offered by developed countries. According to the average ratio of the above selected countries, of about 20,000 persons per hospital, and about 116 persons per bed, in 1982, Jeddah should have had in 1981-82 60 hospitals and some 10,345 beds. Compared with the actual number (shown in Table 6.10) the deficiency was of 41 hospitals and some 7,531 beds. Moreover, if we take the 11.4 per cent average annual percentage increase in Jeddah's population between 1974-1978 as a norm (see Chapter 3) medical services of this type by 1985 should increase to 92 hospitals and some 15,828 beds which far exceeds the proposed number in the general plan for Jeddah.

In absolute terms hospital medical services have improved dramatically in recent years and the situation in hospitals is now much better than in the past. Most old hospitals have been enlarged and renewed. In addition there is a plan to abandon the General Hospital in Bab Sharif because it is a very old building and a new building is under construction. In May 1983 it was reported that a "medical city", including a teaching hospital and medical science colleges, would be built on part of the old international airport site at a cost of SR 6 bn.⁽²⁰⁾ Also there is a plan to bring other government hospitals up to the standing of the King Fahad hospital.

In addition, most private hospitals are now extended and others are being constructed. All these factors will improve the medical services in the city, but it will take a long time for Jeddah to reach the level of the developed countries.

In terms of national ranking, according to the tariff categories of private hospitals laid down by the Health Ministry in April 1983, Jeddah still leads, with 8 of the 10 first class establishments in the country, Riyadh and Dammam having one each. (21)

Dispensaries

Dispensaries come second according to their importance in the range of health establishments. Dispensaries, as functionally described below, fall into two categories; State and private. The first are owned and run by the State to offer medical services freely to the people (local and migrants). The private are owned and run by the private sector mainly by private doctors who charge for their services. The situation in private dispensaries is usually superior to the State organisations in that they usually have specialised doctors in a variety of medical branches, whereas in the State dispensaries there is only one general physician, his assistants and a few nurses, serving a very large number of patients. The number of government dispensaries has grown from 9 in 1980 to 14 in 1982, and it is planned to increase further their number to cover all the city's quarters, and also to improve the quality of equipment, buildings and staff.

There has been an even greater increase in the number of private dispensaries, from nil in the early 1970s to 19 in 1982. This can be attributed to their profitability and financial support from the government, as building dispensaries costs less money and time than building hospitals. Furthermore, most, if not all, the dispensaries in Jeddah occupy relatively cheap rented houses rather than purpose built structures so there is a lack of well designed and adequate service facilities. In 1982 the total number of dispensaries in Jeddah was 33, giving one dispensary for every 36,363 persons. This ratio seems to be very high and requires immediate attention.

Clinics

Clinics are very important third level health establishments serving Jeddah and the Western Region. Here too there are private and public sectors, a common feature in most Middle Eastern countries, as well as most countries in the world. Private specialist clinics in Jeddah attract patients from cities all over the Western Region and the Kingdom, evidence which supports that of the many other functions that Jeddah fulfils, is a national functional role - a strong "pull" factor.

State clinics are usually found in public hospitals to provide out-patients with medical services. Some clinics are also found in dispensaries offering their services after the official duty hours. In 1982 there were 97 private clinics; of these 20 were dentists, 20 general physician, 7 eye clinics and 12 gynaecologists. Clinics are concentrated in the CBD, and northern and eastern parts of the city, while the southern part of the city suffers from a shortage of these kinds of services (see Fig. 6.6).

Other Health Establishments

In the previous section attention was paid to the curative side of medicine. Here are considered, first, what may be regarded as, primarily, preventive medical facilities ranging from school health care to quarantine arrangements for pilgrims and health offices which undertake vaccination and inoculation services.

Among such health establishments, school health units can be considered the most important as they offer their services to large numbers of people in the city, including both students and staff. Moreover, they carry out a general checkup of students before they enter school each year; pharmacies also offer medicines free to all students. These units include doctors from most medical branches. The number of doctors increased to 31 in 1980-81 compared to 27 in 1978-79,

which is still not high when compared to the increase in student numbers recorded in the previous section.

Secondly there is one further group of health services, State owned and private pharmacies. The former are found in most government health establishments offering pharmaceutical services free to the whole population. The range of medicines available in these pharmacies depends upon the size of the hospitals and the number of departments included in each hospital. However some people distrust free medicines because they believe that the quality is not as good as that of the private pharmacies and this has been one factor, more important in the past than now, in encouraging the growth of private pharmacies. These play an important role in supplying medicines, not only for the city itself, but for the whole Western region as well as to the whole country. Most wholesale drug stores in the Western region are concentrated in Jeddah, as are the main suppliers for other cities.

In 1979 there were 66 wholesale drug stores, 63 retail drug stores and 27 pharmacies in Jeddah. Pharmacies are very well distributed throughout the city and are mostly located along the main road and also in the CBD where private clinics are also concentrated in this section of the city (see Fig. 6.6). Medicines, as well as other necessities, are heavily subsidised by the government.

Health Personnel

As mentioned earlier in this Chapter, the government has expanded the Ministry of Health budget to meet the rapid increase in medical services, but one major problem which remains is the shortage of health personnel. There is still a deficiency in the number of doctors available to serve the facilities and population adequately. In 1974 in Jeddah there were 323 ⁽²²⁾ doctors, a ratio of 1,762 persons per doctor, lower than the Kingdom's 1976 ratio which was 2,200. ⁽²³⁾

In 1982, the number of doctors had increased to 778, population per doctor ratio declining to 1,542. Nevertheless the ratio in both periods was very high compared with that in the developed countries, for instance, U.S.A. (617), United Kingdom (761) and France (678)⁽²⁴⁾ In 1982 the number of doctors working in the government sector represented 46 per cent of the total doctors in the city, while the rest are working for the private sector. However, if we take the 1985 Ministry of Health's objective of 1,000 persons per doctor, Jeddah in 1982 should have had 1,200 doctors, a shortage of 422 and by 1985, there should be 1,836.

This situation is also present in health personnel groups such as dentists, nurses and others. The general manpower shortage and government policies towards expatriate labour towards training all become critically relevant to the level of this type of service function and, of course indirectly to others, as examined in the conclusion to this chapter.

Public Utilities

Public utilities are of great importance to any urban development. In America and Europe, such public utilities have usually been planned and laid out before any construction development takes place, whilst in most urban areas in Saudi Arabia buildings are laid out before the necessary utilities are built (see Chapter 7). Although Jeddah is the second largest city in the Kingdom it is still lacking many essential public utilities.

Water supply is one of the most important public utilities for any city, but this together with water demand and distribution have been discussed in some detail in Chapter 1 and developments up to 1947 in Chapter 2. Here, concentration is entirely on something which has become equally critical; electricity, its supply, distribution and some other related points.

The generation and distribution of electricity in Jeddah is the responsibility of the Saudi Consolidated Electricity Company (SCECO)

but the city's generating capacity is found not only in the company's several generating plant locations, as shown in Figure 6.7, but also in the Saline Water Conversion Corporation's (SWCC), located in the northern part of the city (see Fig. 6.7). In addition to these main sources there are several privately owned and operated generating plants. The balance between SCECO and SWCC capacity has changed over time, in 1972 the former generating 63 per cent, in 1977 19.8 per cent and by 1981, 37.4 per cent. As in the Gulf Emirates, and elsewhere in Saudi Arabia, the production of electricity and desalinated water has become extremely interdependent.

Table 6.11 Annual Total Energy Sold (M.W.hr)

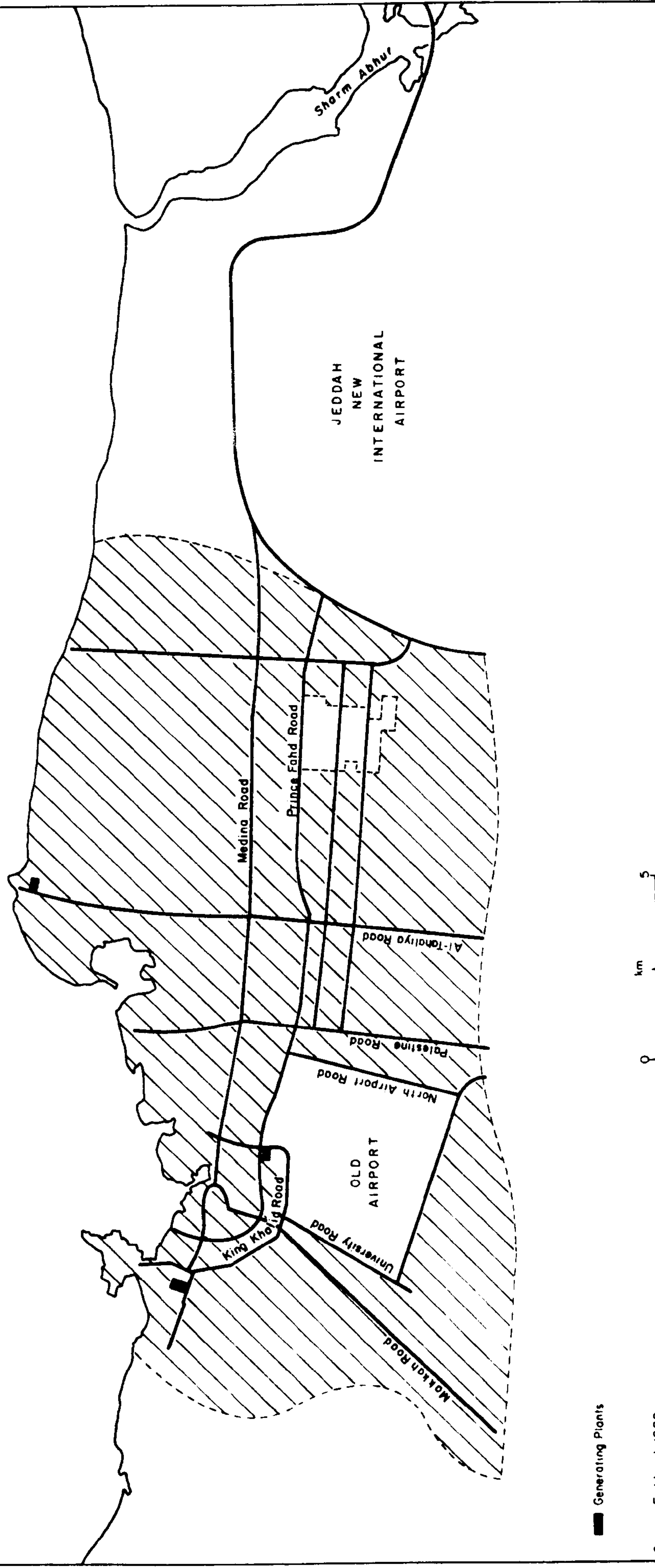
Year	Energy sold	Annual per cent of increase
1972	259,685	-
1973	311,404	20
1974	386,051	24
1975	532,365	38
1976	709,121	33.2
1977	950,908	34.0
1978	1,365,472	43.6
1979	2,017,559	32.3
1980	2,813,511	39.5
1981	3,532,428	25.5

Source: Saudi National Electrical Power Company

2. Ministry of Finance (Central Department of Statistics)

From Table 6.11 one can see the continuous increase of energy consumption from the two main sources, with a sharp increase in some periods, particularly after 1975. It is worth noting that since the

Fig 6.7 GENERATING PLANTS AND AREAS COVERED BY ELECTRICITY, JEDDAH 1982



■ Generating Plants

Source: Fieldwork 1982

early 1960's up to the mid 1970's, Jeddah suffered from electricity cuts which become a daily occurrence lasting sometimes for more than ten hours. This was because of the huge and growing demand resulting from the increased use of electrical appliances, particularly air conditioning during the early 1970's, largely because of low priced electricity. It is very common today to see air conditioners everywhere, even in "shanty" areas. Quite apart from qualitative changes in personal domestic consumption, there has been a great volumetric growth in demand as the city's population and functional activities have expanded. The seasonal regime of demand is itself an indicator of some of these changes. During summer, when temperature and humidity are very high, the demand for electricity for air conditioning is very high, but on the other hand the interaction of other factors has now appeared to lower this. These factors include school holidays and the growing practice of higher and medium level income population leaving the city for holidays during the summer. Since this group has the highest consumption of electricity, this seasonal migration to some extent neutralises the effect that rising living standards have on electricity demand.

Tables 6.12 and 6.13 show that industrial consumption represents a small percentage of electricity users, only 3 per cent on average. As Table 6.13 demonstrates, household consumption, 65 per cent of the total, is dominant whilst commercial uses and premises take a larger proportion than all governmental and municipal demand. The peak load on the system was 132 MW in 1975, increasing to 348.3 in 1978 and 864.4 MW in 1981, an increase of 554 per cent over 1975. Electrical power production in Jeddah alone is approximately 16.5 per cent of the average total in the main regions in Saudi Arabia in 1981. (25)

Table 6.12 Industrial and Other Consumption of Electricity (KWH)
in Jeddah

Year	Industry	%	Others	%	Total	%
1975	19,645	3.7	512,720	96.3	532,365	100
1976	19,633	2.8	689,488	97.2	709,121	100
1977	22,272	2.4	928,636	97.6	950,908	100
1978	33,246	2.5	1,333,226	97.5	1,365,472	100
1979	53,767	2.7	1,963,792	97.3	2,617,559	100
1980	95,756	3.4	2,717,755	96.6	2,813,511	100
1981	125,792	3.6	3,406,636	96.4	3,532,428	100

Source : Ministry of Finance, Central Department of Statistics

Table 6.13 Electrical Energy Consumption by Sectors in Jeddah

Year	Household KWH	Commercial KWH	Governmen- tal KWH	Industrial KWH	Total KWH
1399/1979	1,313,935,979 65%	330,072,757 16.4	319,783,202 15.9	53,767,702 2.7	2,017,559,640
1400/80	1,814,326,577 64.4	460,967,158 16.4	446,597,155 15.8	95,756,778 3.4	2,817,647,668
1401/81	2,407,719,718 64.4	612,036,651 16.4	592,957,269 15.8	128,341,686 3.4	3,741,055,324
1402/82	2,928,386,750 65	737,200,744 16.4	714,219,547 15.8	126,309,974 2.8	4,506,117,015

Source: SCECO, Unpublished, 1983, Jeddah.

Table 6.14 Number of Consumers and Number of Kwh per Consumer

Year	Number of consumers	Kwh per consumer
1972	43,229	6,007
1973	47,527	6,552
1974	51,702	7,467
1975	55,468	9,599
1976	64,305	11,027
1977	77,481	12,273
1978	96,509	14,149
1979	124,248	16,238
1980	146,168	19,248
1981	168,784	20,928

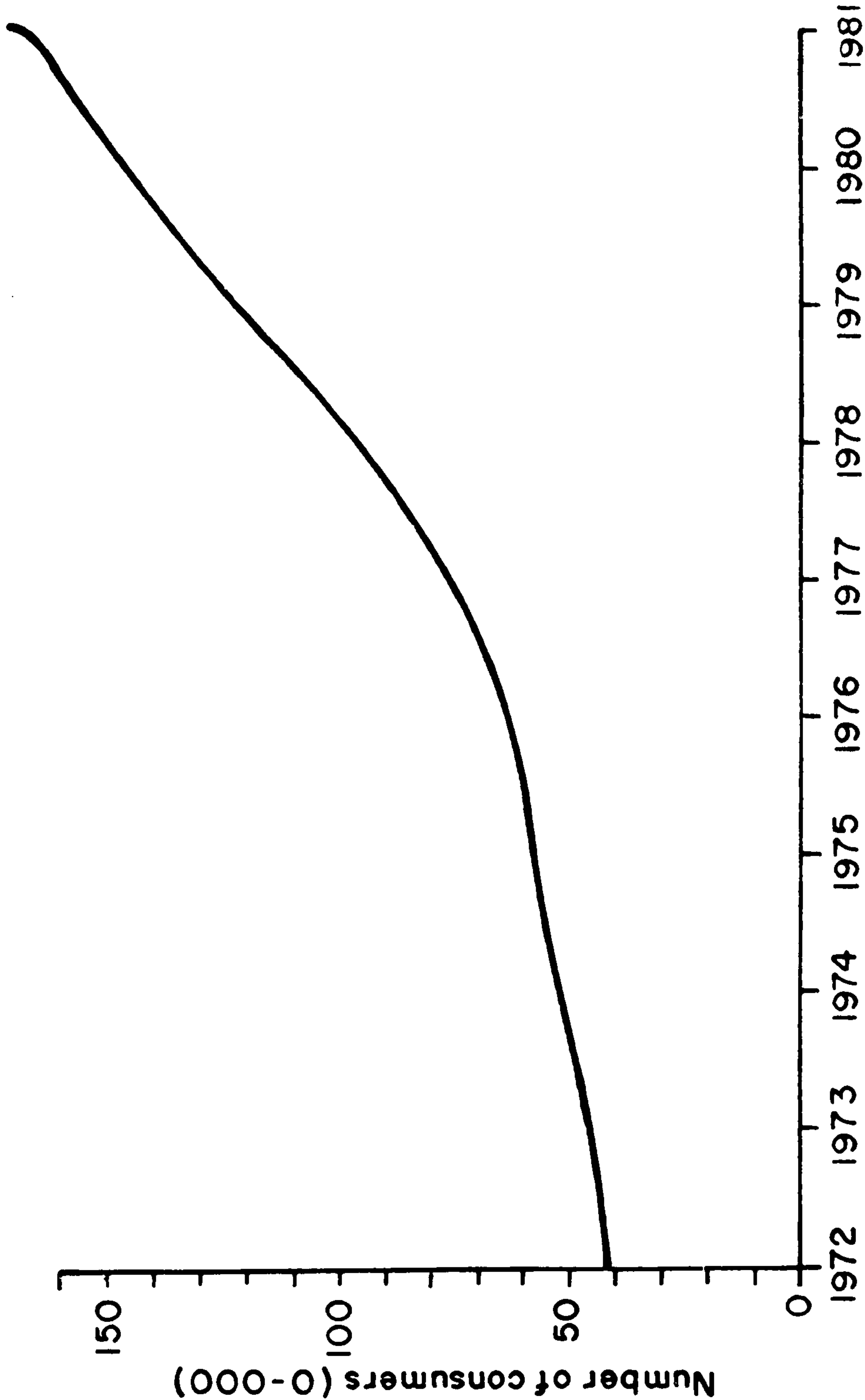
Source a.Saudi National Electrical Power Company

b.Central Department of Statistics

The number of consumers and the number of Kwh per consumer have risen substantially as shown in Tables 6.14 and Figure 6.8. This can be compared with the total consumption in the Kingdom of 331,525 Kwh in 1975 and 995,311 in 1981. About 17 per cent of total consumers in 1981 were located in Jeddah.

It is believed that the distribution network now services all areas of development south of King Abdulaziz Airport ⁽²⁶⁾ (see Fig.6.7) and in some areas extends beyond the Airport. This, of course, doesn't include vacant land within the built-up areas and some used by migrant people.

Fig 6.8 GROWTH OF CONSUMERS (NUMBERS) OF ELECTRICITY,
1972 - 1981



Source: Table 6.14

Religious Function

Jeddah, since its foundation, has been, though not a centre for pilgrimage, a channel and a centre for pilgrims, for it provided all kinds of facilities required by them; a port for sea-landings, shipping and land transport such as by camel or more modern means of transport, accommodation, food etc. Nowadays the role of Jeddah as a reception centre has been expanded to include facilities which did not exist in the past, such as airport and health facilities, a modern road system and many organisational agencies. The increase and fluctuations in the number of pilgrims depend on the mode of transport used. For example, when sea transport became dominant, especially after the destruction of the Al-Hijaz railway in 1916, and the improvement in the technology of ships, the number of pilgrims using sea transport increased at the expense of other modes of transport using overland routes. Moreover, in general, the easier the transport mode, and the more secure the region, the more pilgrims Jeddah will receive; the more facilities available the more pilgrims will arrive.

The earliest figures available for pilgrims are those of 1807 showing an increase from 38,000 to 112,000 in the pilgrims number during the pilgrimage season of 1831. ⁽²⁷⁾ Since then the number has increased from year to year with few exceptions. In particular years when the number of pilgrims did decrease, it was because of several factors, such as international security, particularly when the navigation routes were unsafe, the internal security in the countries where pilgrims came from, and finally, the economic situation occurring in some Muslim countries which prevents people from going to Hajj. However, from Table 6.15 one can see there has been no great decline in the total number of pilgrims and if any mode of transport is affected by one of the above mentioned factors, pilgrims can shift to any other mode.

Table 6.15 Number of Pilgrims by Mode of Travel and Their Percentage

Year	By Sea		By Air		By Land		Total
	No.	%	No.	%	No.	%	
1949	83,897	77.7	13,757	12.8	10,327	9.6	107,981
1950	84,583	84.2	13,523	13.5	2,425	2.4	100,531
1951	111,470	75.5	27,049	18.2	9,131	6.2	147,650
1952	116,377	77.9	18,349	12.3	14,724	9.6	149,450
1953	113,707	70.0	20,869	12.9	27,785	17.1	162,361
1954	135,754	58.5	33,801	14.5	62,716	27.0	232,271
1955	123,903	56.2	30,716	13.9	65,894	29.9	220,513
1956	104,262	48.3	54,513	25.2	57,390	26.5	216,165
1957	122,169	59.2	32,027	15.5	52,183	25.3	206,379
1958	114,421	60.0	31,719	15.5	58,227	28.5	204,367
1959	125,114	46.6	50,812	21.2	86,392	32.2	268,318
1960	143,047	51.6	49,107	17.7	85,084	30.7	277,238
1961	93,943	43.4	53,481	24.7	69,018	31.9	216,442
1962	81,150	41.2	59,952	30.4	56,031	28.4	197,133
1963	105,604	40.6	85,369	32.8	69,312	26.6	260,285
1964	128,498	45.4	83,483	29.5	71,338	25.1	283,319
1965	101,406	35.5	90,980	31.0	101,732	33.5	294,118
1966	113,391	35.9	107,078	33.9	95,757	30.2	316,226
1967	83,984	26.4	119,184	37.1	114,979	36.5	318,147
1968	94,248	25.1	129,744	34.6	150,792	40.3	374,784
1969	90,992	22.4	144,972	35.6	176,331	42.0	406,295
1970	84,547	19.6	208,663	48.4	138,060	32.0	431,270
1971	99,023	20.6	238,658	49.8	141,658	29.6	479,339
1972	137,187	21.3	328,478	51.0	179,517	27.7	645,182
1973	130,566	21.4	356,953	58.7	120,236	19.9	607,755
1974	177,390	19.3	463,639	50.5	277,748	30.2	918,777
1975	113,374	12.7	496,239	55.5	284,960	31.8	894,973
1976	80,906	11.3	374,751	52.1	263,383	36.6	719,040
1977	63,663	8.6	461,450	62.4	214,206	29.0	739,319
1978	68,791	8.3	505,808	61.0	255,637	30.7	830,236
1979	66,645	7.7	513,695	59.6	282,177	32.7	862,520
1980	50,552	6.2	572,292	70.4	190,048	23.4	812,892
1981	56,668	6.5	649,224	73.8	173,476	19.7	879,368
1982	55,735	6.6	623,425	73.0	174,395	20.4	853,555

Source : Ministry of Finance, Central Department of Statistics
Ministry of Interior, Pilgrims Statistics 1981.

Table 6.15 shows that pilgrims arriving by sea were more numerous than those travelling by other modes of transport up to 1960 but then began to decline in numbers year after year particularly after 1966 until it reached its lowest in 1981 when it was only 6.5 per cent. The proportion of pilgrims using land transport peaked in 1969 and was overtaken by air users immediately afterwards. The construction of the airport in Jeddah in 1945 and the expansion in the buildings and runway in the mid 1950's along with other expansions which took place later on, will be discussed in some detail in Chapter 8. This of course did not mean a decline in road facilities available, but rather that most pilgrims prefer to use aeroplanes as the fastest and easiest mode of transport.

When it comes to the type of service that Jeddah offers to pilgrims one can say that there are several kinds of facilities Jeddah offers accommodation through transit compounds, Madinat al-Hujaj known as the city of pilgrims, health, water, electricity, in addition to some private services such as hotels and restaurants. In the past, pilgrims used to stay for more than two weeks which put great pressure on the city's services, particularly on accommodation, water and later electricity, health and transport. Most of the delay went on administrative documentation. To reduce this pressure, the government built two compounds of transit accommodation, one for sea pilgrims in Al-Mena Road and the second for air pilgrims attached to the airport (see Fig. 6.4). Two phases of expansion took place in the airport compound to cope with the great increase in the number of air pilgrims, as can be seen in Table 6.15. The first expansion was completed in 1974-75, and by 1978-79 the second phase was completed. These two compounds, in addition to accommodation, offer other services such as post offices, money exchange facilities and restaurants. Pilgrims in

these compounds used to stay for a week or more, depending on the availability of both government and private buses to transfer them to Makkah. The compound in al-Mena Road, in addition to its accommodation facilities, acts as a seasonal shopping area where pilgrims from several countries sell goods they have brought with them and buy local or imported articles, some using the proceeds for Hajj expenses.

In addition to accommodation and other services offered in the compounds, other public and private sector services are affected as a result of the increase in demand, among these electricity, water, traffic, health, customs and migration. Unfortunately, data is not available to show the degree of increase in functional activities during the Hajj season, although some general points can be made. In addition to overtime paid for local employment, most government departments who are concerned with the Hajj bring employees from neighbouring agencies and departments such as doctors, police, customs and the immigration department.

Restaurants and hotels in the city are mainly affected by overland pilgrims, usually from other parts of Saudi Arabia. During the Hajj season overcrowding is a common feature in Jeddah.

However, the transfer of flights to the new airport, the construction of the Jeddah, Makkah and al-Medina motorways (see Chapter 8), simplification and speeding-up of the documentation process, have all reduced the time which pilgrims actually stay in Jeddah to the shortest in history. At present, most documentation and customs and migration processes can be completed on the same day and coaches, both government and private, are available to transfer pilgrims to Makkah. This of course reduces the pressure on the services, as mentioned earlier and in the near future, the effect will reach an irreducible minimum.

Given this, further analysis of the Hajj as it has affected Jeddah in the context of this study is not strictly necessary. Further reference

can be made to the studies of H.M. Ilam and M.S. Mecci ⁽²⁸⁾ and those carried out by al-Hajj Centre, King Abdulaziz University.

Mosques

Mosques are a dominant feature in all Saudi cities as in all Islamic cities, particularly as nuclei of complexes of institutions and buildings associated with the central mosque and bazaar. The principal mosque functioned as a place of prayer, a court of justice and an intellectual and educational centre. ⁽²⁹⁾ In addition to the six old mosques in the old town mentioned in Chapter 2 there were 72 mosques and one Eid prayer ground in 1972. This number increased to 281 in 1978-79, ⁽³⁰⁾ whilst in 1982 Jeddah had 621 mosques. Of these 250, or 40 per cent, were built by public finance and the remaining 371, or 60 per cent, by private finance. Such a large number of private mosques can be attributed to the fact not only that Islam encourages wealthy people to build mosques but that Jeddah had, as a result of its multi-based prosperity, so many wealthy benefactors.

Mosques in Jeddah can be divided into four categories according to their spheres of influence and size; Al-Zawia, local Mosque, General mosque and Al-Eid prayer ground. Al-Zawia can be defined as a very small mosque attended by people living in a small community whom it brings together for daily prayers. Of this type there are about 82 comprising 13 per cent of the total. The average size is about 56 sq.m. Almost all this type are located in the old quarters of Jeddah. The local mosque rarely attracts worshippers from other quarters unless it has a very good speaker Khateeb but serves a community larger than does the Al-Zawia. The size of the local mosque is larger than Al-Zawia, and in this both weekday and Friday prayers are performed. In 1982 there were 410 local mosques, comprising 66 per cent of the total distributed throughout the city. (Fig.6.4). The size of the third type, the general mosque

averages about 900 sq.m. This type, particularly those located in the new development area, is characterised by outstanding architectural features; some have a unique minaret and they are well furnished inside. All these mosques are air conditioned. It is worth noting here that most of the mosques of this type draw their worshippers from all over the city, especially when it has a good speaker Khateeb. The last type of mosque in Jeddah is the Al-Eid prayer ground which consist of about 62,500 sq.m. located east of the CBD (see Fig. 6.4) on Makkah Road. This prayer ground used to be outside the city as preferred by Islam, but as the city expanded very rapidly it is now inside the built-up area. However, this prayer ground is used only twice a year, first of all for shawal after Ramadan and in the tenth of Zu al hejja.

The fieldwork survey shows that mosques in general are unevenly distributed, some quarters have more mosques than they need, while other areas need more mosques (Fig. 6.4). As a result mosques in these areas are over-crowded, especially during Friday prayer and people are forced to pray on adjacent forecourts and pavements. At present all mosques are supplied with electricity and water and most of them are air conditioned but more attention is required in some old mosques.

Recreation, Entertainment & Amenities

Recreation services are essential for any city since people need to relax from time to time, especially after the five day working week operated by government offices. This function can be divided into two categories according to the ownership, public and private. The public sector is mainly concerned with setting up and maintaining public gardens, parks, squares and open spaces. In addition, recently the

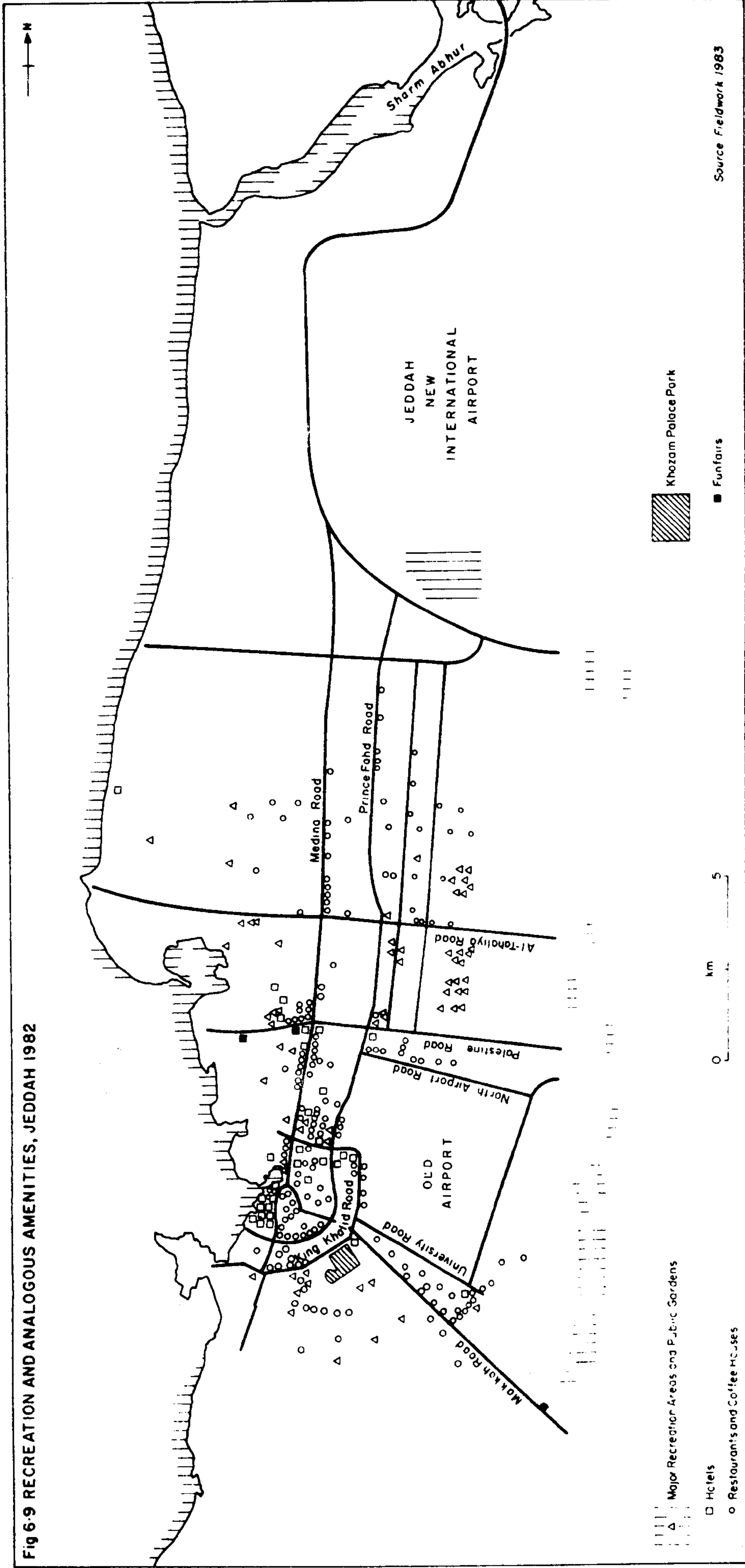
Municipality has chosen some locations along the cornich and leased them to the private sector in order to build attractions such as restaurants, cafeterias and fairgrounds. The private sector is concerned mainly with hotels, restaurants, coffee-houses and the fun fair.

A. Public Sector

Jeddah, in this context, is different from any other Western Region city and possibly other cities in the Kingdom in that there are potential recreational areas which actually can meet the recreational needs of the city as well as of other surrounding cities, particularly Makkah and al-Taif. There areas are; the south coast with many kilometers of sandy beaches, the peninsula of Al Ras Al-Aswad which lies about 30 kms from the city, the area north of Sharm Abur known as "Twenty nine palms", the foothills of al-Hijaz mountains to the eastern side of the city, Sharm Abhur and more recently, the Cornich (see Fig.6.9).

It is worth noting here that some of these recreational areas have been known and used by people for long periods of time, particularly Sharm Abhur, the foothills of Hijaz and areas along the sea front such as Kubat Ashara and the area which used to be in front of al-Hamra palace (now al-Cornich). Many of the inhabitants go to these areas to relax and pass their spare time as family groups. In the past, up to the early 1970's, the City of Jeddah turned its back on the Red Sea as a recreational element in the city, though some limited use was made of the water front. In the mid 1970's the picture started to change as a result of the construction of the al-Cornich and by 1982 the sea front became the dominant recreational area in Jeddah. Sharm Abhur, at the northern boundary of the Cornich, is the most intensively used recreational area on the Red Sea littoral, by most of the population of the city as well as in the Region. This area becomes very crowded at

Fig 6-9 RECREATION AND ANALOGOUS AMENITIES, JEDDAH 1982



weekends (Thursday and Friday) mid term vacations and summer holidays for swimming, water skiing, motor boating, sunbathing, snorkelling and the use of restaurants and hotels.

Public gardens used to be few in number and in the early 1970's there was only one public gardens, the Khozam Palace Park (see Fig.6.9). At present (1982) several public gardens have been built and opened for the public, some with playgrounds for children. The total public gardens number 102 with 5,867,745 sq.m. of green land surface ⁽³¹⁾ (Fig. 6.9). Before the establishment of such public gardens children used to play on local open spaces known as baraha, but they were small in area and number and not evenly distributed. Another disadvantage was that they were privately owned and when the city started to grow, most of these areas disappeared together with some privately owned open space on the outskirts of the city, as a result of the expansion of the built-up area. It was estimated that in 1980-81 there was 1.5 sq.m. of green land surface for each person, which is expected to increase to 10-20 sq.m. by 1990. ⁽³²⁾ As can be seen from Figure 6. public gardens are distributed throughout the city with a modern and large one along the Cornich.

B. Private Sector

These are mainly hotels, restaurants, coffee-houses and the fun fair.

Hotels

The hotel industry in Jeddah grew and expanded in association with its importance as a commercial, industrial and administration centre. The hotel services were at first very limited; in 1952 there were only 3 hotels, increasing to 10 in 1962; of these 3 were first class hotels, 4 second class and 3 third class. ⁽³³⁾ In the

1970's Jeddah suffered from the shortage of hotels as a result of the increase in demand for hotels from national, as well as international visitors. The national all-year-round visitors consist of Saudis and non-Saudis who come to Jeddah for governmental, business and private purposes associated with the multi-functional activities analysed in this study and with Jeddah's regional and national status. The international visitors are mainly representatives of international companies and much hotel business is generated by meetings between these and the local business community. In addition, there are other seasonal visitors, mainly officials of government ministries who stay for short periods during the residence of the government in Jeddah, before it moves to the summer capital of al-Taif. There is also a sizeable group of pilgrims who remain as guests of the government. Jeddah, since the early 1970's, has experienced a boom in hotel construction which has shown some sign of slowing down in the 1980's. By 1980 there were 48 hotels with 5,202 rooms ⁽³⁴⁾ (see Table 6.16 which also shows the expected number of rooms by 1985 and the number of hotels in each grade).

Table 6.16 The Distribution of Hotels and Rooms According to their grade up to 1985

Grade	Number of hotels	%	Number of rooms up to 1980	Planned increase of rooms up to 1985	Total Rooms	% of increase of rooms 1980-85
Excellent	4	8.34	1,470	1,108	2,578	75.37
First A	6	12.50	1,284	1,715	2,999	133.56
First B	3	6.25	360	-	360	-
Second A	12	25.00	1,244	993	2,237	79.82
Second B	5	10.41	239	-	239	-
Third	12	25.0	415	-	415	-
Temporary	6	12.50	190	-	190	-
Total	48	100	5,202	3,816	9,018	73.36

Source : Jeddah Chamber of Commerce and Industry, 1980.

The study carried out by the Jeddah Chamber of Commerce and Industry "The Economic Advantage of the Hotel Industry in Jeddah"⁽³⁵⁾ showed that by 1980 the shortage of hotels which occurred in mid-1970 had been made good. Moreover, in the same year, 1980, there were more hotels in Jeddah than needed off-peak, the average occupancy rate being only 62.15 per cent during the one year period 1979-80.

From Figure 6.9 one can see that hotels are scattered throughout the city, particularly along main roads with some concentration in the CBD which contains about 50 per cent of the total hotels of the city. The northern part of the city comes in second place with 25 per cent, the eastern part of the city with 20.8 and Makkah Road with only 4.2 per cent. The city at present requires no more hotels, but more attention is required to be given to those it already has.

Restaurants and Coffee-Houses

Restaurants can be divided into two main types, traditional and modern. Traditional restaurants are mainly concentrated in the old quarters of the city. These restaurants offer different types of fare, either what is considered to be local food such as Harisa, Ras Mandy, Fool, and Motabaq, or food reflecting the ethnic taste of immigrants such as at Indian and Indonesian restaurants. Prices in these restaurants are very cheap compared to modern restaurants.

Modern restaurants (including cafeterias) were introduced to the city recently. One of the oldest modern restaurants in the city is Muntazah Kilo Ashara or Casino Kilo 10, in addition to the few modern restaurants available in some hotels. The picture has recently changed completely and modern restaurants are scattered throughout the city, particularly in the northern part. This can be attributed to the higher standard of living, recent economic improvement, the

location and importance of Jeddah as a centre for many services, and the changes in social preferences and attitudes. All these have contributed to the increase in the number of migrants as well as local people. The writer considers the changing habits to be a very important factor. For example, in the past local people, particularly women, seldom went to restaurants, but at present women have started to become involved in careers as teachers, nurses, doctors etc. and the demand for restaurant services has increased. The proportion of women attending restaurants is greater in Jeddah than any other city in the Kingdom. As in traditional restaurants, modern restaurants consist of establishments offering local food and specialized food within a wide range; it is possible to find dishes from all over the world. These restaurants provide an essential service for the urban population, as well as providing an attractive amenity to a wider hinterland. The restaurant trade is now an important source of employment in the city, the total number of people working in restaurants and hotels being 10,290 in 1981 compared with 45,626 in the Kingdom as a whole, 22.5 per cent of the total. (36)

The number of restaurants in Jeddah (including hotel restaurants, and cafeterias) totalled about 747 of varying sizes and quality based on the writer's survey and some unpublished statistical figures from some Municipality branches. Figure 6.9 show their distribution throughout the city.

Coffee-houses are one of the oldest and most important leisure activities in the city, for both local and foreign people. Coffee-houses are mainly distributed among the old quarters of the city. There were several earlier located on the outskirts, particularly in the northern and eastern parts of the city, but with the expansion of the built-up area, most of these are now within the built-up area. Coffee-houses in the inner part of the city particularly attract foreigners, mostly foreign labour and

some of these coffee-houses are used by specific groups of migrants, whereas the outlying coffee-houses are mainly neighbourhood amenities, especially for young people as a result of increased vehicle ownership among the young.

A fun fair is another traditionally based source of entertainment, especially for children. There are only three fun fairs in Jeddah, two located in the northern part of the city in al-Hamra quarter and one located in Casino Kilo 10 (Fig. 6.9). These fun fairs attract people from all over the city, as well as from the region. There appears to be a demand for more fun fairs in other parts of the city, such as the eastern and southern areas.

Conclusion

It can be seen that all essential urban services were present in embryonic form but extremely limited before the creation of the State of Saudi Arabia and were developed only slowly during the early stages of the new State. These services, in fact, were increased and improved during the 1960's, but such development was not enough to meet the increased needs and demands of the population. Since the early 1970's, as a result of increased oil revenue and government attention to expenditure on services, the picture has changed. The development of education services in terms of number of teachers, buildings, equipment and students, as a result of great increases in budgetary allocation is noteworthy, girls' education being the last to expand.

Health services which, until recently, were relatively backward in terms of health establishments, health personnel and equipment have been considerably expanded since the mid 1970's and improved in quality. In this context, the private sector plays an important role in the increase of the number of total health establishments; this of

course is a result of government subsidy. Nevertheless, health services compared to international levels still have some way to go, particularly with hospital provision.

Hajj facilities have been improved recently as a result of the improvement which has taken place among other functions such as road transportation, airport and documentation.

Other services, including public utilities, recreational entertainments and amenities have improved greatly. In some services there was no need for increase, such as restaurants, hotels and coffee-houses and others are satisfactory, such as electricity, water supply and recreation. However, more attention should be paid regarding maintenance in all services.

The effect of the accelerating expansion of all the sectors examined in this Chapter, directly and indirectly, on employment is very great. The construction industry, and by extension the manufacture of building materials has particularly benefited. Private sector response even in health and education, has been vigorous but the main thrust has come through central government expenditure.

The flow of national revenue into the social services and into public utilities such as water and electricity plants has, since the 1950's, been very large and has accelerated. As a result, the traditional functions of Jeddah which before the creation of the unified Kingdom were limited to levels which the urban economy could support through some limited taxes and benefactions, have now been swamped by recent growth externally funded by the State. This change in balance, which appears very clearly in the field of education and health in which all public sector expenditure is met by government, is considered further in the conclusion to this study. Already, however, the multiplier effects of State revenue inputs into the public sector on all other functions is clear.

CHAPTER 6

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- (26) Direct contact with the Engineering Department of the Saudi National Electrical Power Company, Jeddah 1982.
- (27) Long, D.E. (1979) The Hajj Today : A Survey of the Contemporary Makkah Pilgrimage. State University of New York Press, Albany, New York, p.127.
- (28) See Ilam, H.M. (1979) Aspect of the Urban Geography of Makkah & Al-Madinah Saudi Arabia, Unpublished Ph.D.Thesis, Department of Geography, Durham University and
Mecci M.S. (1979) An Analysis of the Effects of Modern pilgrimage on the Urban Geography of Medina, Unpub. Ph.D. Thesis Department of Geography, Durham University.
- (29) Costello, V.F. (1977) Urbanization in The Middle East, Cambridge University Press, Cambridge, p.10.
- (30) Sert Jackson International Saudconsult (1980) Jeddah Action Master Plans. Final Report Deputy Ministry No.14 p.113.
- (31) Anon (1980) Afforestation of Jeddah : the Red Sea bride. Tihama Publication, Jeddah p.10.
- (32) Ibid.
- (33) Al-Ansari, A. (1980) op.cit pp.438-443.
- (34) Jeddah Chamber of Commerce and Industry (1980) The Economic Advantage of The Hotel Industry In Jeddah. Research Section Research No.1, Jeddah p.60.
- (35) Ibid.
- (36) Central Department of Statistics (1981) Summary, Census of Private Establishment, Al-Riyadh, p.49.

CHAPTER 7

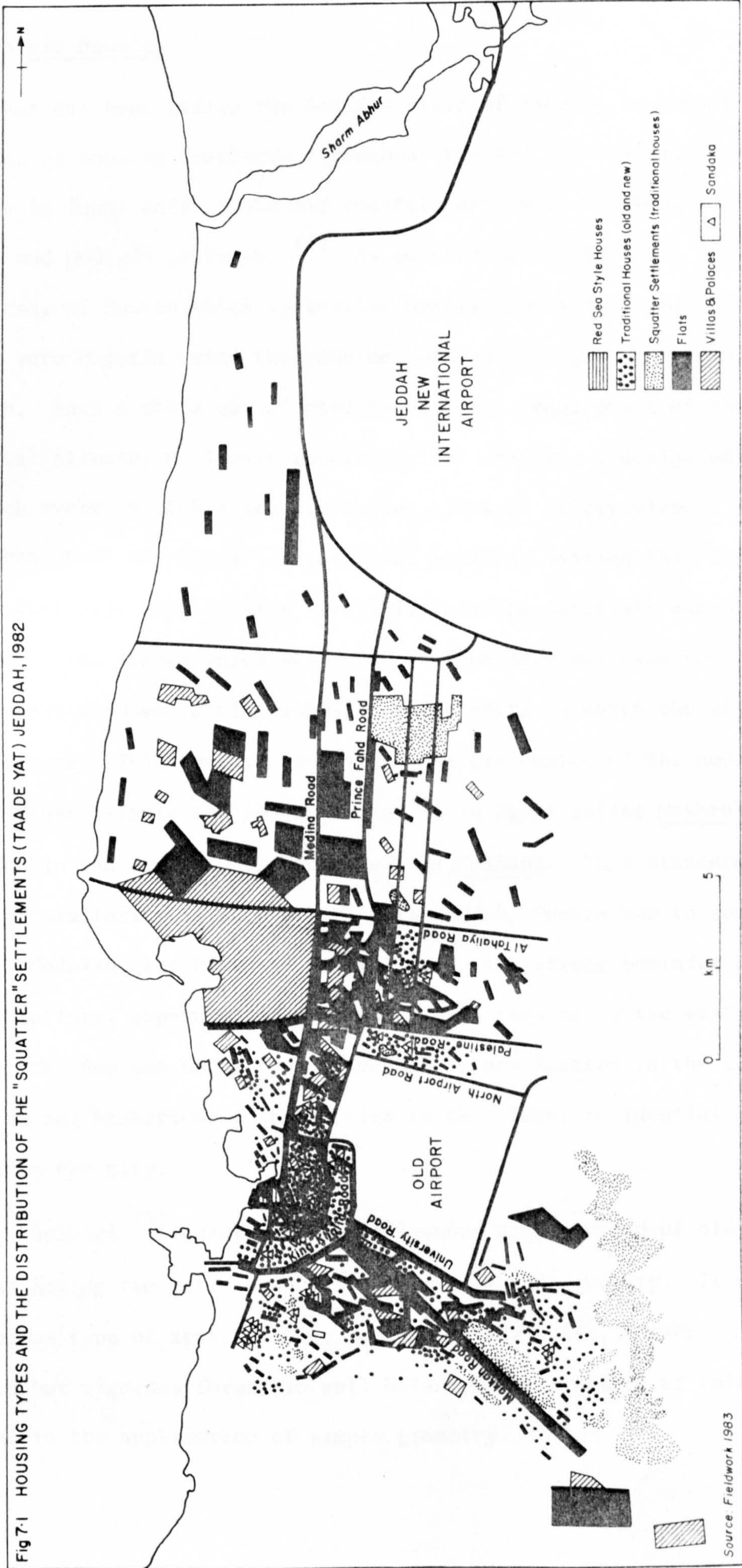
RESIDENTIAL FUNCTIONS

During the last decade Jeddah has experienced an astonishing rate of development in its residential functions, both in volume and in type. Housing expansion, which, as noted in Chapter 2, commenced to be significant in the late 1940's, accelerated thereafter, but even the rapid growth after 1974 did not keep pace with the high demand for houses due to the rapid increase in population. The characteristics of population structure and immigration have been considered in Chapter 3 and the differentially high levels of income and expenditure within the communities have already become apparent in parts of this study. Demand and response in the housing sector has reflected the many variables involved and in this Chapter the various functional aspects are considered, utilising various types of evidence, morphological and typological. During the whole of the period examined there was a substantial increase in rents and land values owing to the shortage of houses available in the market; relevant data is however scanty and incomplete. However in the early 1980's there began to appear a surplus of some types of residential accommodation because of the introduction of government housing schemes in addition to the government subsidies for residential construction through the Real Estate Development Fund.

Housing Types and Distribution (see Fig. 7.1)

Several categories of houses can be distinguished in Jeddah, and these are significant here as indicators of various processes of functional change. Each category has a particular location, date of origin and typical building materials. There are, in addition, areas of mixed residential unit types.

Fig 7-1 HOUSING TYPES AND THE DISTRIBUTION OF THE "SQUATTER" SETTLEMENTS (TAADE YAT) JEDDAH, 1982



Source: Fieldwork 1983

Red Sea Style Housing

What has been called the Red Sea style of housing is one of three main types of housing scattered throughout the Red Sea coastal area. This type is found only in the big coastal ports such as Jeddah, Suakin in Sudan and Hudaydah in Yamen. ⁽¹⁾ As pointed out by Greenlow ⁽²⁾ in his study of Suakin, which is located nearly opposite to Jeddah, its builders were Hijazis using the same methods and designs as in houses in Jeddah. Such a style was adopted to meet the requirement of the Red Sea coastal climate, a climate requiring, for comfort, a design which will catch every available sea-breeze and allow it to circulate freely throughout the house. Traditional builders matched this basic environmental need with locally available building materials except for timber. The timber which was imported from Java was used to make casement windows jutting out into the streets to catch the slightest passing breeze. This feature, common to the old houses of the Red Sea and some other Islamic and Indian styles is in Egypt called Mashrabiyas, but in Suakin and Jeddah they were known as roshans. This standard feature of similarity is very striking in Jeddah, Suakin and to some extent Hudaydah (see Plates 7.1, 7.2), and is a strong reminder of Jeddah's cultural exposure to and contact with regions to the west via the sea. The Red Sea house type of Jeddah is now located in the CBD, which from the historical point of view is the oldest residential district in the city.

Al-Bokhari ⁽³⁾ describes the indigenous architecture of old Jeddah as having two basic features simplicity and serenity. It was a homologous type of architecture, seeking an aesthetic, beauty in simple but vigorous forms, in well balanced relationship of void to solid and in the application of simple geometry.

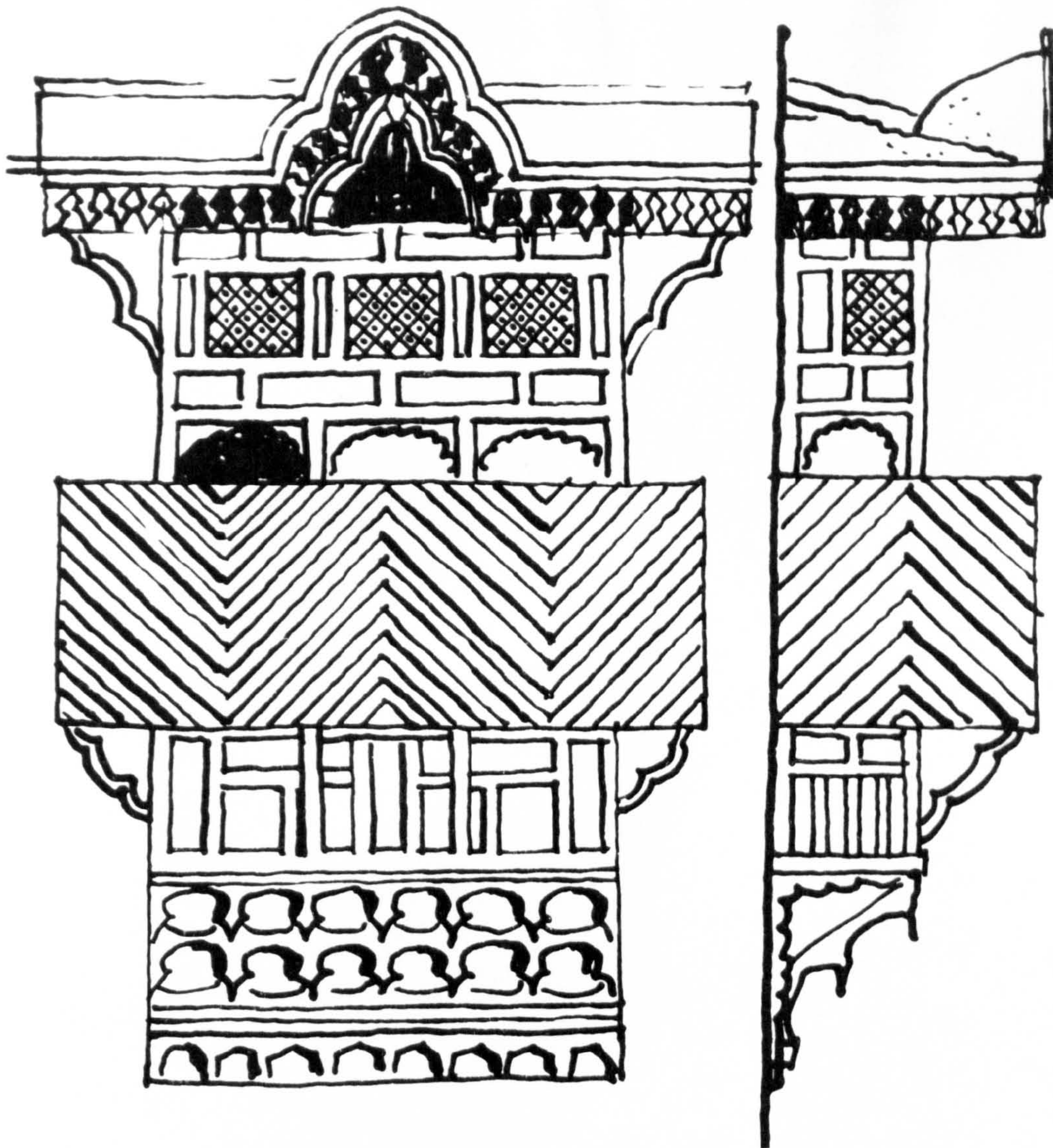


Plate 7.1: An example of wooden carving Roshan in an old Jeddah house

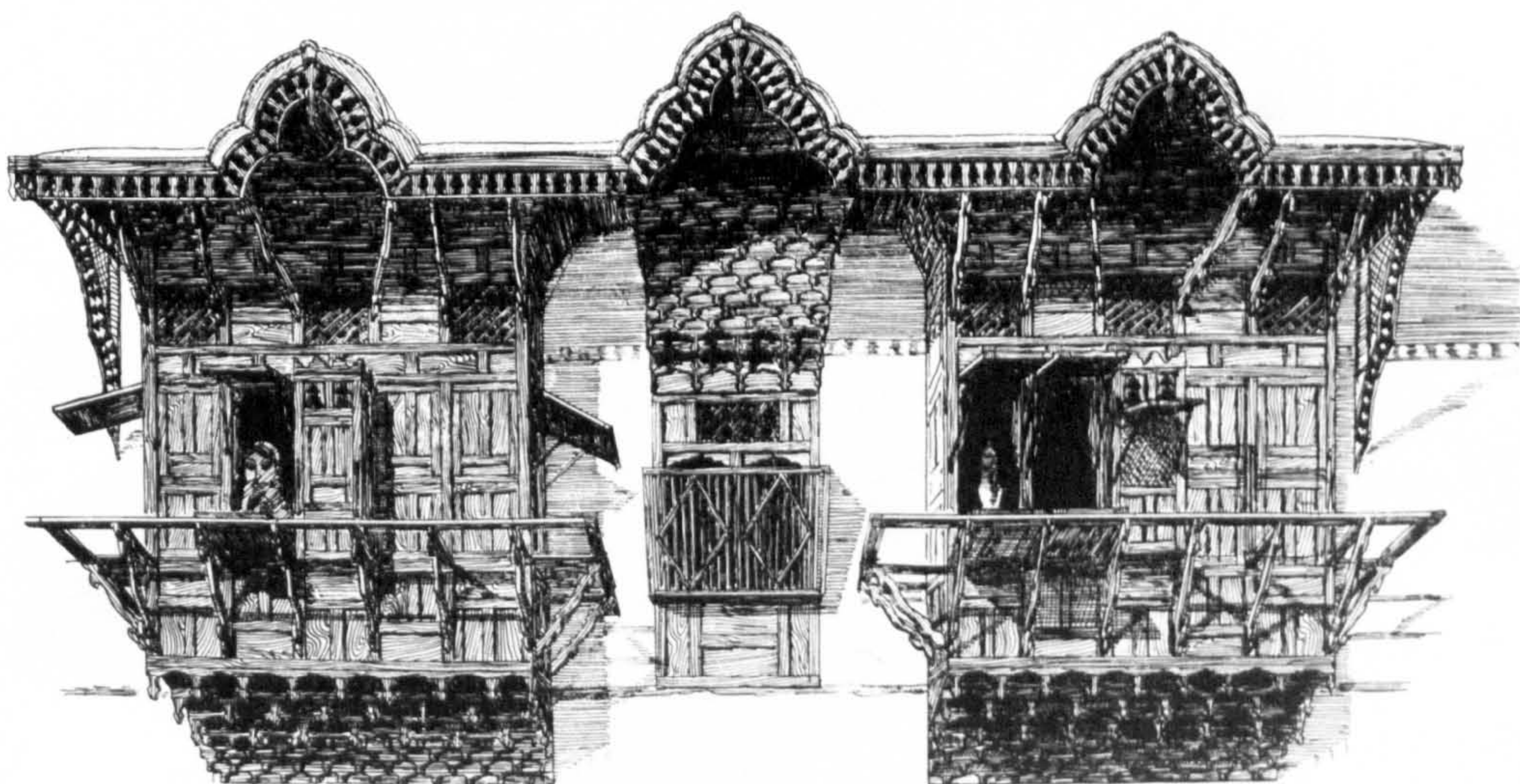


Plate 7.2: Same method of wooden carving Roshan in Suaken.

The house consists of two or more storeys with many small windows, with wooden shutters. Some large houses have wooden balconies, Roshan which have remained the most striking feature on the facade of typical Jeddah town houses. The function of these balconies is to permit the occupants to see without being seen, for the exclusive use of the harem (women) as extension of the family living room and might be used to entertain close friends. ⁽⁴⁾ The semi enclosed balcony was often the coolest spot in the house. The Roshan, therefore, provides privacy and ventilation. (Plate 7.2).

The house itself consists of Dihlis entrance hall where strangers are received, this leading to Diwan, a reception room. This ground floor functions for the reception and entertainment of male guests and the accommodation of servants. The upper floors are reserved as a private area for the family use, comprised of a series of rooms, each with a different function. Each room has one or two windows. The roof is flat to be used by the family during night for sleep, and other leisure uses. In style and design this type of housing is associated with the large extended families and dependants of the dominant merchant group.

Traditional houses

Traditional houses fall into two types which may be termed old and new. The old traditional houses were built after the demolition of Jeddah's walls in 1947. They are mainly concentrated in the old quarters of the city such as al-Baghdadeya, al-Kandara, al-Sha'rafeya, al-Sahifa, al-Hindawiyah etc. The old traditional dwelling is to some extent similar to the Red Sea style one in design and the method of construction with the exception of two characteristics; it used new types of building materials such as cement block, glass and metal work,

and had no extensive decoration within the house (Plate 7.3). Most of these houses are normally two to four storeys high, providing residence for large extended families. This social concept is coincident with that of Red Sea style houses where all the family members live in the same house, but now carried forward in the first period of growth during which continuity is predominant.

The new traditional houses mainly appeared in the city to meet the great demand for housing which grew mainly in the late 1970's. The new traditional house was quite different in purpose from its precursors since it was mainly required by low income labour immigrants needing accommodation in close proximity to their work places. There are two standards of this house available in the city; fair and bad. The first is mainly of approved construction and contains most essential services such as electricity and water. The second type is mainly of unapproved construction erected on unapproved land and lacking all essential services (Plate 7.4). Most of such houses are located in what is known as Taa deyat areas (squatter areas), (see below). In general, the new traditional houses are normally one to two storeys high and they are scattered throughout the city.

It is worth noting here that both the Red Sea style houses and the traditional houses, whether old or new, are in unbroken terraces of back to back dwellings, leaving no space for wide roads, any kind of gardens, green areas or playgrounds. They are still lacking in modern design, layout and architecture. It is very difficult and expensive to replan and redevelop these areas.

Modern houses

These include two types of dwelling : flats and villas (see Plates 7.6, 7.7). Both concepts of dwelling were introduced recently



Plate 7.3: Approved traditional houses in some old quarters.



Plate 7.4: Unapproved traditional houses in the squatter areas.



Plate 7.5: Sandaka built within the residential area.

in the mid 1950's. The introduction of flats was mainly to meet the great demand for housing by the early arrivals of foreign professionals from neighbouring countries. Flats are now all found in high multi-storey buildings and scattered throughout the city (Fig.7.1). It is noteworthy that most of the first flats, erected mainly in the CBD, were later transformed into offices or consulting rooms. A large number of flats were erected in a second wave of building between 1975-1982 and occupied high multi-storey buildings (between 5-10 storeys). These flats are generally well designed to meet the social requirements of local inhabitants more of whom now utilise such accommodation. However, there is still some prejudice against apartment living and most people still prefer, if possible to live in detached houses for more privacy.

Villas are located in two major areas: the northern area, which has the largest villa estates in the city, and the smaller eastern area which is situated to the east of King Kahlid Street along Makkah Road. There are fewer villas than other types of dwellings since they each occupy larger land areas than other types of dwellings and are correspondingly more expensive, ranging in the top category to palaces. The villa concept was first introduced to the city as offering suitable residences for upper class people (mainly traders) who started to move from the central area of the city as it became congested by business activity to the zone immediately outside the CBD, land to the north, e.g. al-Kandara, al-Sharafeya, al-Baghdadeya and further north along Medina Road at a later period. Villas are well designed, each one occupying 500 sq. m. on average, with some gardens in their courtyards. Palaces appear in the city at a later stage in the mid 1970's as a result of the oil boom which enabled some people to build a very luxurious residence (Plate 7.8). Almost all palaces are located in the



Plate 7.6: Modern apartment buildings.

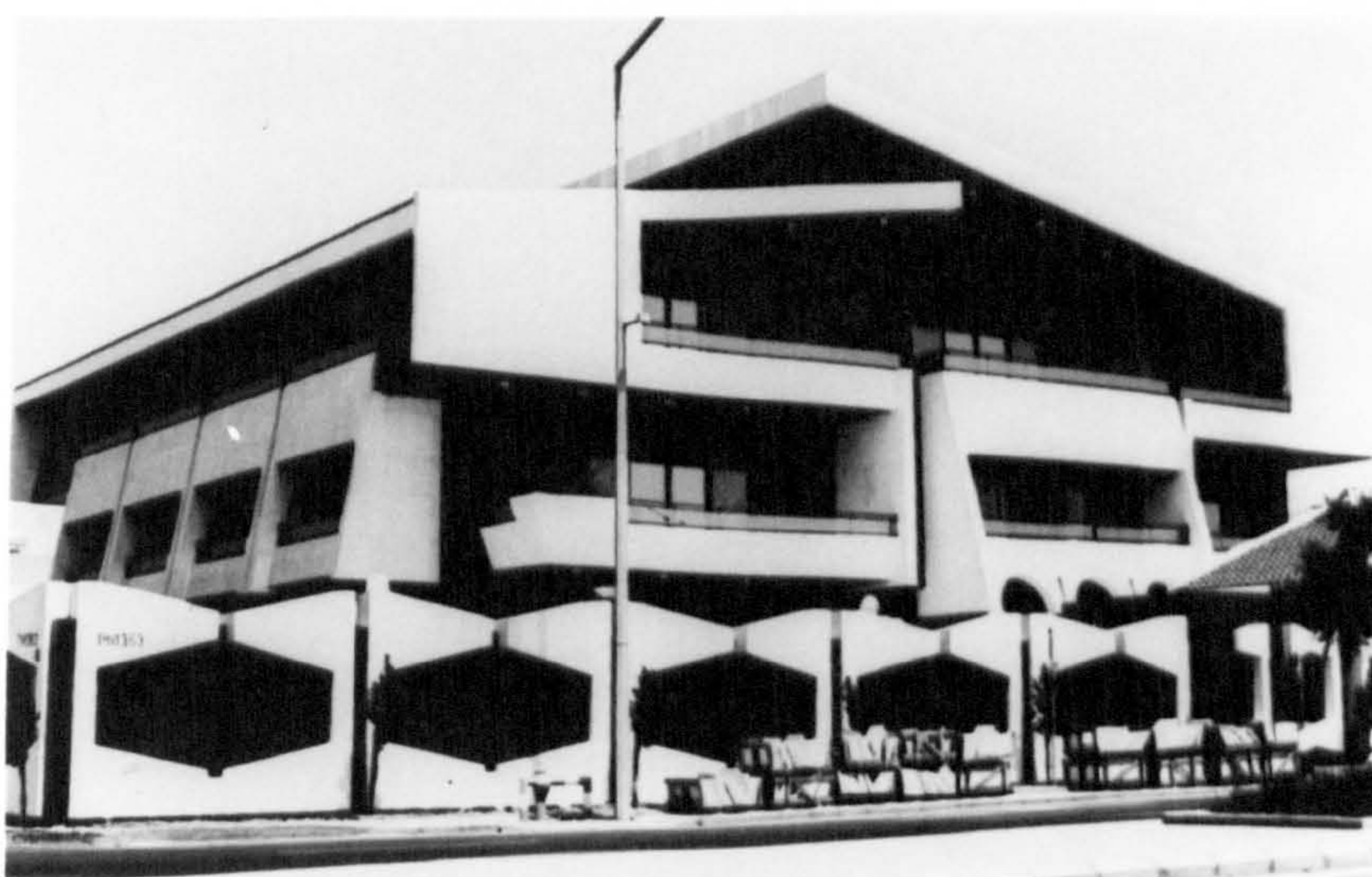


Plate 7.7: Modern villas in the northern part of the city.

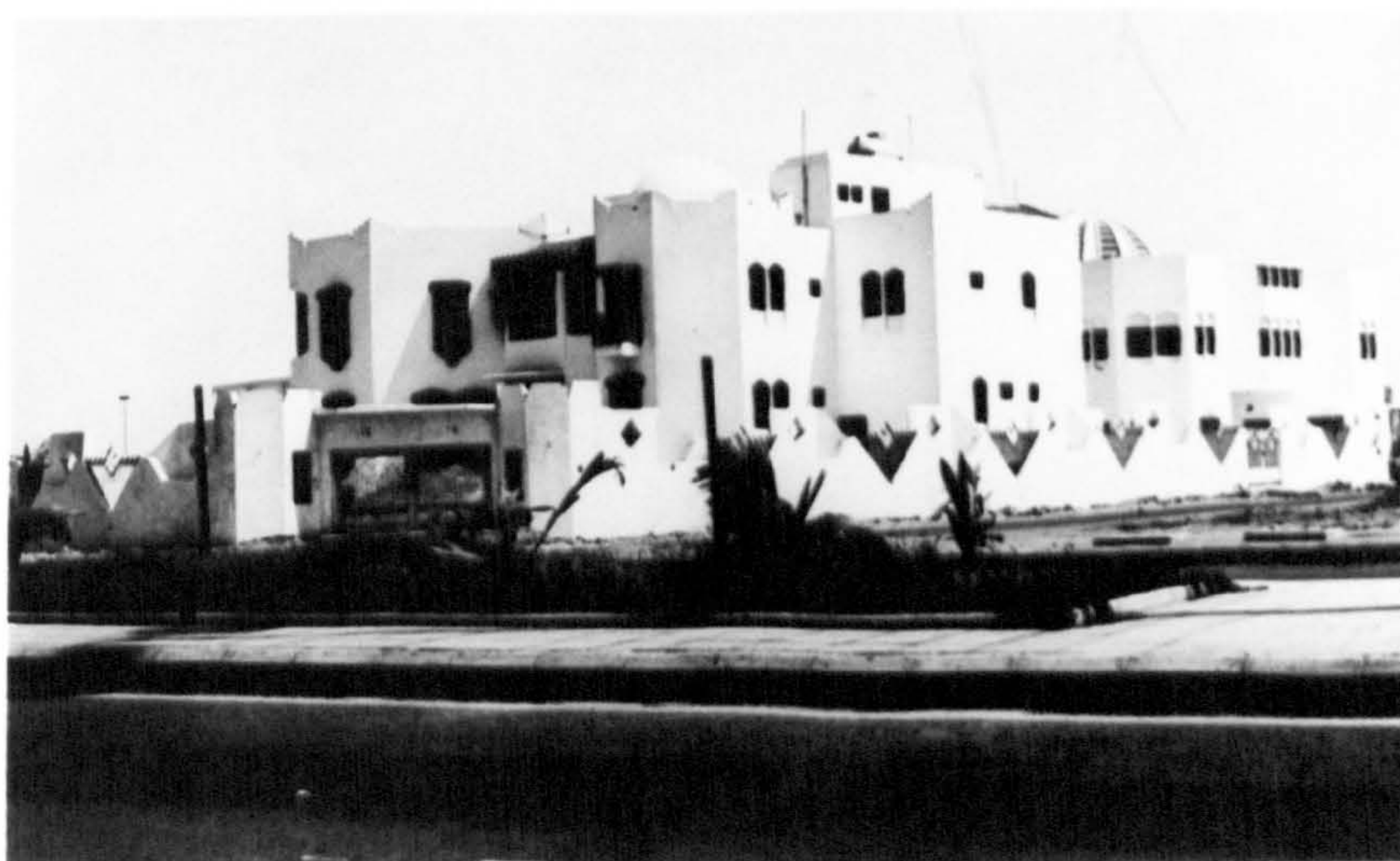


Plate 7.8: One of the palaces in the northern part of the city.

northern part of the city. They are well designed, each occupies 2,500 sq.m. on average, with garages and large surrounding gardens.

Sanadek (cottages; sing. sandaka) exist in several parts of the city where vacant land was available in proximity to work places.

Sandaka type dwellings are usually built around a courtyard of 1,200 sq.m. on average within the residential areas. Each courtyard typically has about 10 sandek on average. Sandaka type dwellings have no specific form because they are constructed of any available material e.g. tin sheets, wooden boxes, petrol drums, corrugated iron, etc. (see Plate 7.5).

Generally, a sandaka does not have a separate kitchen or bathroom. It is very difficult to be precise about the date of their origin, but it is generally accepted that sandaka dwellings have existed since the late 1950's. Since then, and because of the subsequent waves of low income immigrants, they gradually have expanded until they reached their existing scale. The land on which the sandaka dwellings are built is almost always owned by individuals (except al-Karantina). The residents have to pay the owner a monthly rent according to individual agreement. Most of such rented courtyards which are located within the residential areas draw their water from the main supply (Ain al-Azizyah) and may have electricity connections to more regularly established neighbours (which might include the owner of the land). Some of the sandaka dwellings have been constructed illegally in some areas, particularly in the southern part of the city, in so-called "squatter settlements" (see below).

The total number of dwellings has increased as a result of population growth. According to the Socio-Economic Survey of 1971, Jeddah had a total of 75,300 houses. The proportion of the distinct categories of dwellings then was as follows: traditional houses, 51.7 of all homes, were clearly the dominant group, then came flats accounting for

28.2 per cent of all homes, The third group were the sandaka dwellings, 15.7 per cent of the total; the fourth group were villas accounting for 4.4 per cent of all homes. By 1978 the total number of dwellings had increased to 173,489, an increase of 130 per cent in 7 years.

There were some changes in the proportion of the categories, flats had risen to 54.2 per cent, villa dwellings had risen to 7.7 per cent, whereas the traditional dwellings had dropped to 29.4 per cent and the sandaka category was reduced to 3 per cent only. (5)

Based on the Municipality population estimate of 1982 as 1,200,000 and an average family size of 4.8 the total number of dwellings in Jeddah by 1982 can be estimated as 250,000, including the vacant flats of the 'rush' housing project and the Jeddah public housing project completed subsequent to the 1982 fieldwork. From the writer's experience this estimate appears reasonably accurate and matches the huge expansion of the built-up area which has taken place in the last few years. The reasons behind the fact that most of the increase was in the section of traditional houses and flats will be discussed later in this Chapter. (For the built-up area expansion see Fig.7.2, 7.3, 7.4 and 7.5).

The Problem of Squatter Areas (Taadeyat)

Squatter development is a very dangerous phenomenon affecting not only the general quality of life but also the level of services offered by the residential function of the city. In general, squatter areas in Jeddah could be described as pseudo-village development within an urban context. However, unapproved construction is a common feature in Jeddah, particularly in the old quarters of the city and is a matter of everyday dispute. This kind of action, which takes place on a limited scale, is generally only a matter for individual dispute which is resolved by the adversaries or through some government bodies

Fig. 7.2 Jeddah in 1969

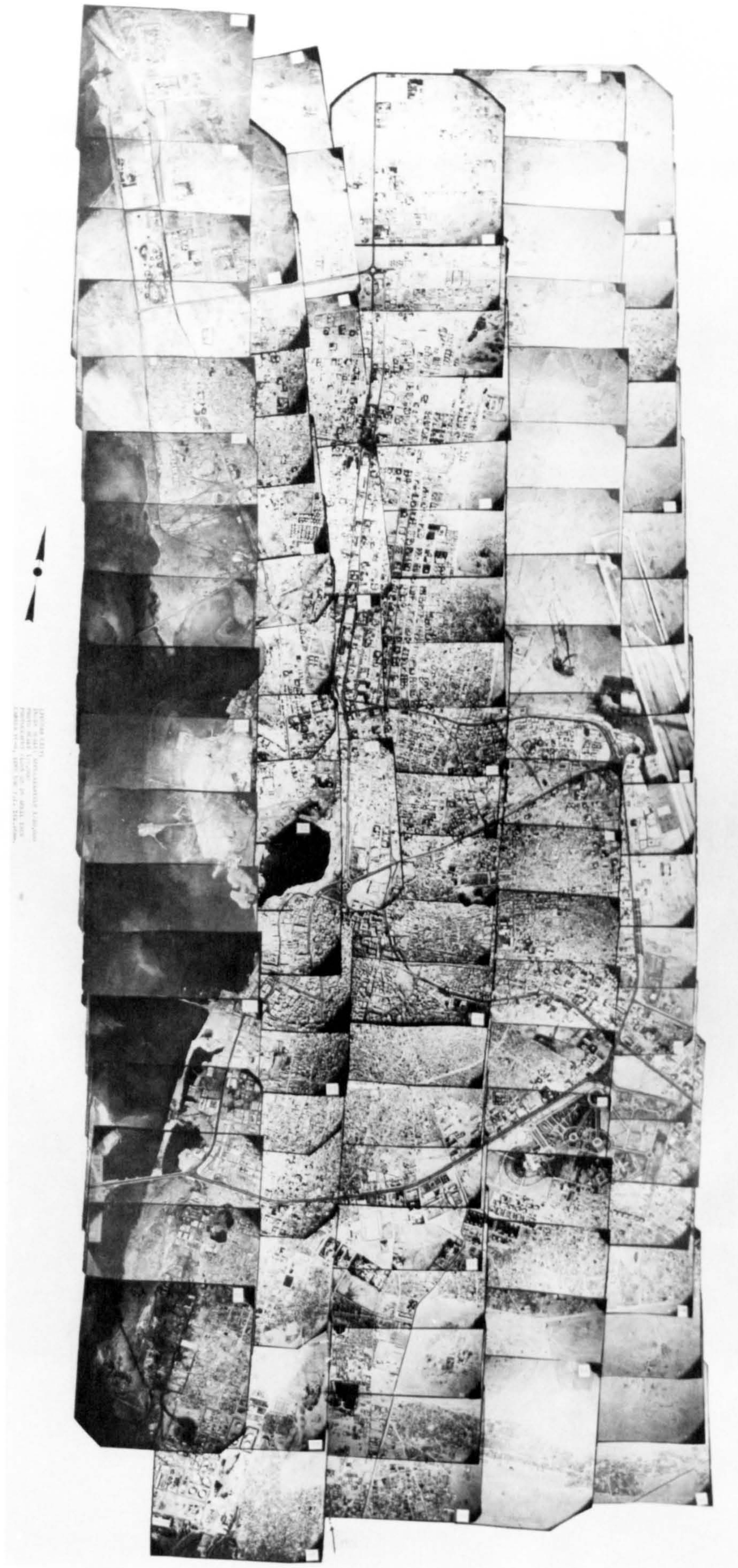


Fig. 7.3 Jeddah in 1971

Note the begining of illegal development on the northern side of Makkah Road squatter area



Fig 7.4 Jeddah in 1974

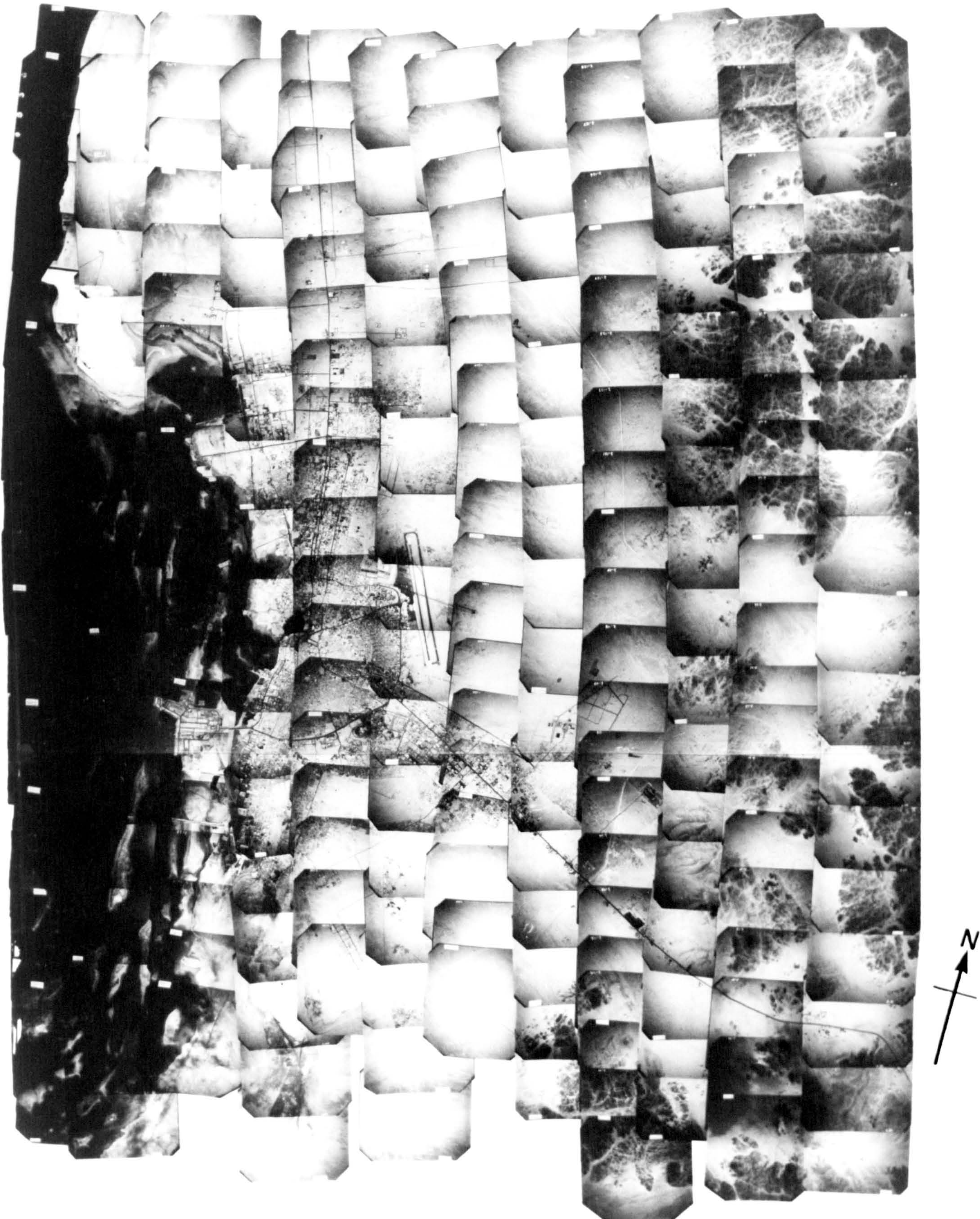
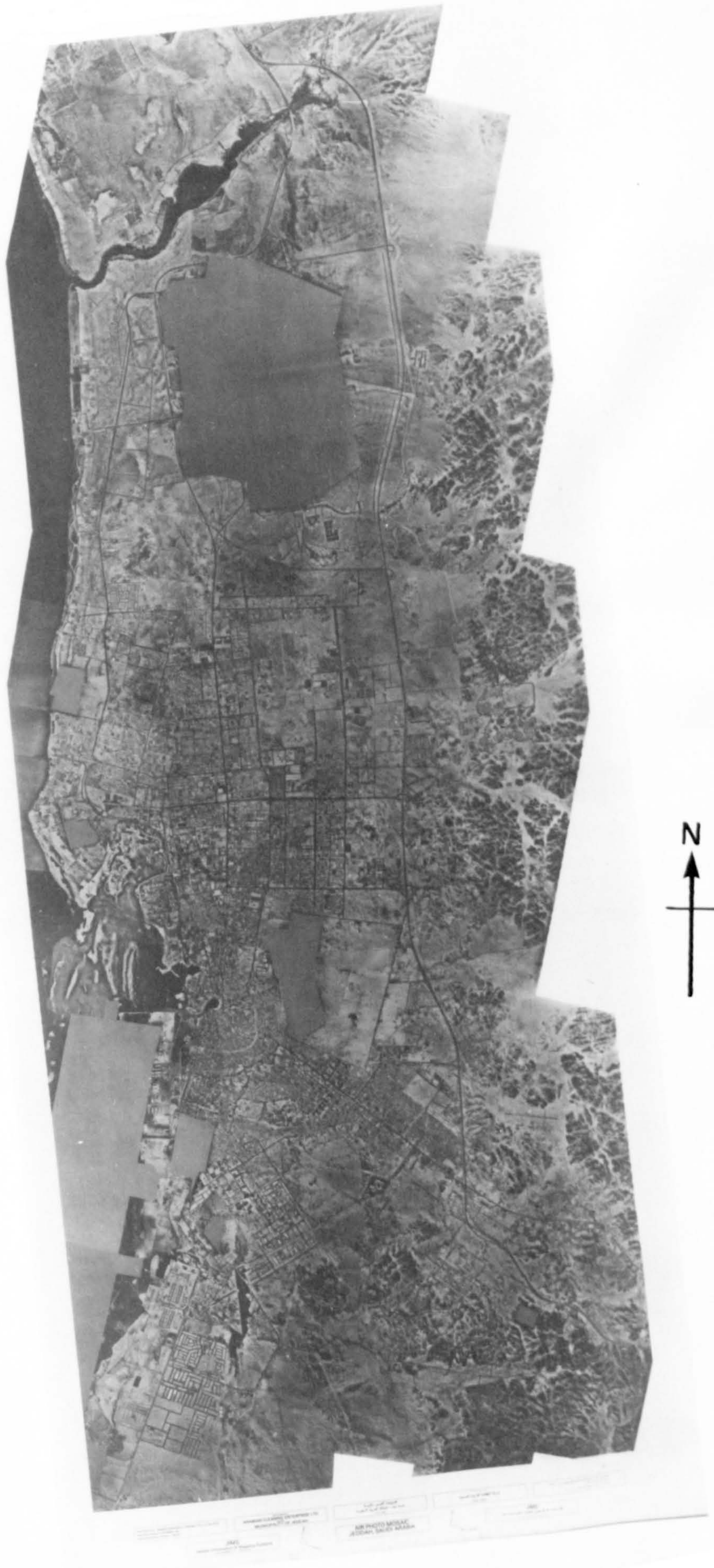


Fig. 7.5 Jeddah in 1981



but what one is concerned with here is something much wider and complicated, in that complete blocks of land in the city have to be considered wholly as squatter areas. The rapid development of such squatter areas is a unique phenomenon which deserves comprehensive study, since there is no written or even statistical material available about this phenomenon. The discussion here must be regarded solely as a preliminary attempt to tackle a large and highly complex issue on which data is very limited. Most of the information presented here is based on fieldwork observation and discussions carried out in some related Municipality branches of the city, as well as other related material concerning some squatter areas in other parts of the world. The rapidity of the expansion of squatter dwellings has been so considerable that it currently presents one of the most important urban problems of Jeddah, of great concern to city authorities. In the case of Jeddah, it is not mainly the number of squatters, but the socio-politico-economic characteristics of the squatters which make these areas so distinct from their surroundings.

The terminological definition of squatter areas in Jeddah, as generally in Saudi Arabia, as distinct from those in some other parts of the world is itself difficult. It was found that the Arabic meaning of squatter, Taadeyat, has some similarity with the equivalent Iranian word Zurabad "built by force" ⁽⁶⁾ and with the Turkish word gecekondu "built overnight", which last can be defined legally as (a) building on land to which the occupant had no legal title, or (b) erecting structure that did not conform to existing minima building codes and were therefore sub-standard in quality. ⁽⁷⁾ However, one of the most acceptable definitions rests essentially on the illegality of occupation of land, house or both. Whatever the definition, squatter settlements are generally, in all countries, scattered haphazardly over patches of ground which are, or have been, marginal to the physical development of the city. ⁽⁸⁾

The several reasons behind the creation of such a phenomenon in Jeddah can be summarized as follows:

- 1) The availability of vacant land in proximity to the city.
- 2) A substantial increase of rent value and land price particularly in the late 1970's, together with a housing shortage which encouraged needy people to look for an alternative to conventional housing.
- 3) The alternative is usually available either in areas too remote from urban work places or on land unapproved for building which is much cheaper than the surrounding approved land which is likely to be very expensive.
- 4) The negligence and/or reluctance of some land owners to properly develop their land and make it available in the market, because they expected to realise greater profit by delay.
- 5) The lack of official supervision in preventing further unapproved construction as well as delays in developing government land.
- 6) Urban blight, i.e. housing clearance because of road widening of the introduction of major public services such as main sewerage which undoubtedly increases the demand for, and the price of land. Compensation for the acquisition of land varied according to location and the size of property. People who received low compensation had to look for land at the same locational and low value advantages of land which they had lost and in this situation unapproved land represented the major solution for their problem.
- 7) The large increase in the low income, mainly foreign, immigrant population.

- 8) The desire of most people to build and own their own house, however poor.
- 9) The introduction of electricity in some of these areas, particularly the North Makkah Road.
- 10) The limitation of government land available for low income housing in proximity to the city together with a long waiting list of beneficiaries.
- 11) One feature specific to Jeddah is that where land originally was owned by Ain al-Azizyah (see Chapter 2), the procedure for purchase of land was simply to allow the individual to choose his own site, the size required and the design required. This obviously lacked any overall concept and resulted in an unplanned mass of dwellings. Even though this was officially terminated, it still went on without approval.
- 12) It has been held, lastly, that cities with a high proportion of uncontrolled settlements are generally those of countries with the highest rates of urbanization; less urbanized and the more urbanized with slower growing cities therefore appear to have proportionately less uncontrolled urban settlement. ⁽⁹⁾ In this context Jeddah appears high among the cities in countries with high rates of urbanization.

Unapproved construction of dwellings is then a common feature in Jeddah. However, there are four specific squatter areas located in different parts of the city which can be considered as presenting the major and most complicated problem. These areas may also be used as examples of all unapproved settlements in the city. Two of these squatter areas can be regarded as "old" phenomena, which were erected before the most recent post 1973 economic boom. The

first is located in the eastern section of the city on the northern side of Makkah Road and is known as al-Shurbtly (Fig. 7.1 & 7.3). It is bounded to the west by Baghdad Street, to the east by Casino Kilo 10, with 650 m in width from north to south. This squatter settlement covers a total area of about 2.6 million sq.m. The second old squatter area is located in the southern section of the city as shown in Figure 7.1, but cannot be precisely demarcated because it is bounded by, and blends with, both approved and unapproved neighbouring settlements.

The other two squatter areas are relatively new, erected in the mid 1970's because of the great demand for housing which became common in most cities in the Kingdom. This was spelled out in the government's Five Year Development Plan for 1975-80 i.e.

... housing in the Kingdom's cities generally grew worse during the government's first Five Year Plan period 1970-75. Approximately 75,000 urban dwellings were constructed during that period, compared with the need and replacements of 154,000. The result has been overcrowding and squatter settlements." (10)

One of these new squatter areas is located in the northern section of the city and covers a total area of about 10 million sq. m. This location, known as Baglaf, is privately owned. The second area is located on the south-east of the Jeddah-Makkah Motorway (Fig. 7.1) and covers a total area of about 13 million sq.m. This occupies public land, most of what is known as al-Hadeka al-Sahraweya : desert gardens. These two areas are the largest unapproved settlements in the city.

The origins of the squatters differ widely. In the southern area almost all are African immigrant labourers, known as Takarna. In the eastern Makkah squatter area there is a mixture of Saudi and non-Saudi. The non-Saudis are a mixture of widely varying immigrants together with well established Palestinians. In the northern and al-Hadeka al-Sahraweya areas most inhabitants are Saudi tribal people

mainly from Qahatan which is why the first settlement built in al-Hadeka al-Sahraweya is known as al-Qahateen quarter. Most of these are employed as officers in the national guard or other government ministries, and are therefore relatively well-off.

The development of such settlements went through various stages, particularly in the new areas. These stages are as follows:

Stage One : With the help of relatives or acquaintances, the squatter searches out cheap land available in these areas.

Stage Two : After choosing his site, he purchases the land from the previous occupant, but as there is no legal documentation, a receipt gives limited protection.

Stage Three : Local and in some cases illegal labour is used to build the house, although the owner may be involved directly in the erection of the building.

Stage Four : The simple construction is started from the outside, the outer walls, doors and windows being formed first. In some cases a solid parapet screen wall, forming part of the external house elevation has to be built even before the staircase to the flat roof. The inner walls are then constructed showing the final layout which usually consists of a living room, family room, one or more bedrooms according to the size of the house, bathroom, kitchen, all built around an internal central courtyard.

Stage Five : The roof is then built using wood as a form of infill panels. The basic materials; hollow concrete blocks, concrete and wood are usually new, although used windows and doors are incorporated to speed up the process. The front of the house is usually completed before the rear which often remains without windows and doors for some time. Occasionally, a fence is erected first and then the construction

of the dwelling takes place behind this (see Plates 7.9, 7.10, 7.11). This process, from beginning to end, can take as little as two days, most of the work being carried out at weekends and nights. This hasty erection of the building ensures some basic customary right of occupation. To cement such legal rights, the squatter furnishes the house with second-hand furniture immediately, and brings the women and children of the family to occupy the building, thus making it extremely difficult for the authorities to demolish the house. Furthermore, since an act published in 1981, it has become increasingly difficult to move families from occupied houses. This obviously gives even more quasi-legal security to the squatters and it encourages further occupation by such families.

The existence of such a phenomenon within the context of the city has caused several problems which must now be examined:

1. Jackson has pointed out that the most serious problems of the squatter areas relate to the general lack of normal urban facilities,⁽¹¹⁾ For example, there is no piped water in most squatter areas. People are dependent on water from storage tanks, which is very expensive. Electricity is also lacking. The only squatter area which has this service is North Makkah Road (al-Shurbtly). In the northern and eastern areas, electricity is supplied by private generators, which is both expensive and dangerous. Electricity cables run across roads, creating a hazard to motor vehicles and pedestrians of the area. In the southern area (al-Karantina), occupied largely by illegal immigrants who are very poor, they rely mostly on very primitive means, e.g. candles for light.

2. There is inadequate access, which results in serious difficulties in reaching the houses during an emergency, for example, fire engines, ambulances, police etc.



Plate 7.9: A stage in the construction of a squatter house.



Plate 7.10: A slightly later stage showing the beginning of the second floor.



Plate 7.11: A view of several completed houses in a typical street of a squatter area.

3. Streets are not paved. The only area with some paved streets is the North Makkah Road (al-Shurbtly). However, there is a lack of essential services such as drainage which leads to severe problems during the rainy season.
4. As the houses depend on small and inadequate septic tank systems, there is constant overflow, and foul water is always running. Obviously, this has adverse effects on the health of the occupants.
5. In addition to pressures exerted on the city's existing resources such a concentration of the population could lead to an increase in illegal activities.
6. The construction of such areas has a detrimental effect on other areas of the city and can lead to a substantial devaluation of the better property.
7. In addition to all of the above mentioned problems, the occupants themselves live in constant fear of government intervention.

The reasons behind the creation of squatter areas, their distribution, the origin of the people, the stages of the development of these areas and the problems resulting from such phenomenon have been outlined above. The purpose here is to outline some alternative proposals and suggestions in order to find some solution to this problem, because no effective plan has been proposed either for the improvement or redevelopment of any mentioned squatter areas. According to the available data and the complexity of the problem, we should bear in mind that it is very difficult to reach a satisfactory solution which is acceptable to both parties. However, such a situation requires urgent, suitable and realistic action in order to reduce to some extent the hardship created for both the city and the people who live in these areas. The writer believes that from the beginning realism must be

combined with a humanitarian standpoint since there are a large number of people, either citizens or migrants who are in great need of such types of accommodation. Obviously, there is also a minority of unscrupulous landowners of the squatter areas who are able to exploit the situation by selling, leasing and becoming rich.

As we have already stated there are no accurate data available and no plans have been carried out in an effort to solve the problem. Suggestions for the squatter areas are as follows:

1. To carry out a comprehensive survey by the authorities of Jeddah for each squatter area in the city. This should include all the data needed, such as the detailed layout of each squatter area which could be done through aerial photographic survey. On this basis one could plan for the infrastructural and other services needed, the number and the situation of houses in each squatter area according to their age, the origin of the people and their reasons for settling in such an area etc.

2. According to the fieldwork survey carried out by the writer it has been found out that it is more realistic to employ a comprehensive improvement programme rather than a piecemeal demolition and resettlement method. However, there are other important factors which should be taken into account before any demolition process takes place, as Turner points out, (12)

"... it was by no means certain that the value of dwelling could be measured by the quality of its structure without reference to its geographical location, its tenancy, and its investment value."

Moreover, recent studies have widely criticized comprehensive redevelopment because its blitzkrieg operation creates long-term scars across the townscape and are socially demoralizing and physically degrading; it breaks up communities, 'decanting' them from the inner areas into peripheral prairie estates; it imposes costs on the old and

the poor by relocating them out of easy reach of corner shops, city centre or workplace. ⁽¹³⁾ In most squatter areas in Jeddah comprehensive improvement can be applied perfectly feasibly except in the al-Karntina squatter area, because most dwellings are sandaka (cottage) type, built with very bad quality materials. Al-hadeka al-Sahraweya area and the northern area are relatively new, the average age of the buildings being seven years. As mentioned earlier, most were built from new building materials. Some of the buildings are incomplete because of the existing problems, but the authorities are unable to demolish them. In the north Makkah Road area (al-Shurbtly) the average age of buildings is much older, and many are built in reinforced concrete. They are still in good condition. These houses were constructed before more vigorous controls were enforced by the authorities, and this meant they were built to higher specifications, resulting in a better quality home. Unlike other areas, the buildings are usually two or three storeys high.

One important fact which should be pointed out, is that all of these properties were built without government subsidies. This is in contrast to the present situation where grants are readily available through the Real Estate Development Fund (REDF) (see below). One further important point to bear in mind is that these traditional houses meet the cultural requirements of the low income families who occupy them.

3. The previously mentioned facts support the writer's opinion that a comprehensive improvement programme is preferable to comprehensive redevelopment. This could be feasible with government subsidies, through the REDF, to complete unfinished houses and to improve sub-standard dwellings.

4. Occupants displaced through the necessary demolition of buildings in order to widen roads and supply services (or simply because the

house is in a very bad condition) could be rehoused in an old but uncompleted housing project in Makkah Road (see p. 327) which is near the occupant's place of work and to urban services.

5. With regard to the ownership of the land, the original owner who has usually received nothing in return for his land from the squatter, could perhaps agree to sell the land legally for a nominal fee. This could be facilitated with the help of the authorities once a comprehensive survey establishes the facts.

6. The writer believes it is necessary to begin with one chosen area which can then be used as a reference when dealing with the other areas.

7. New regulations have to be strictly enforced in order to prevent further unapproved development.

Building Materials

Building materials used today are very different from those used previously. As mentioned in Chapter 2, all of old Jeddah was built entirely of coral limestone and timber. Timber is still used to a limited extent e.g. for windows and doors, and it is gradually being replaced by other materials such as aluminium and steel; this, of course, affects and is affected by the development of relevant industries (see Chapter 5). Because all timber is imported and expensive it is rare to find a house built entirely of wood. In the past timber was used as a form of infill panels, and this present use is continued in traditional style houses.

Mud bricks and clay were used in the past for the construction of houses found on the outskirts of the city, as at Al-Ruwais, Bani Malik and some parts of Al-Sabeel. A few of these houses are still in existence, particularly in Al-Ruwais, and occupied by fishermen. However most of

these houses have been demolished because of their general delapidated state. Some have been converted to non residential use.

Today, new building materials exist to replace the old in which cement represents the major ingredient. Of these, hollow blocks of different types, prices and sizes (as shown in Table 7.1) are available in the market. All are produced locally and according to the requirements of contractors.

Table 7.1 : Size, Type and Price of Hollow Blocks, Jeddah 1982

Size	Type	Price per 1,000 blocks S.R
15 x 20 x 30	Hollow red tile block	1,700
10 x 20 x 30	"	1,500
20 x 20 x 40	Hollow concrete block	1,450

Source : Fieldwork survey, Jeddah, 1982-83.

Cement bricks are used selectively, but sometimes, especially in villas, used for the whole construction. They are standardized to different sizes 20 x 20 x 5 and 20 x 20 x 10, priced at S.R. 350 for 1,000. Local production of all sizes is adequate for demand so there is no foreign importation. Some new sand bricks are also now produced locally and used for outside decoration.

Tiles are produced locally in a variety of colours and patterns. Plain ones are used for roofs and yards, and patterned ones are used for interior use, e.g. halls and bathrooms etc.

Gypsum is an excellent building material locally produced, and factories exist in the city to make the variety of shapes and designs needed for a variety of construction purposes. These are used mainly for ceilings and walls etc.

Marble has become an important building material. It was not used in the past as there was no local extraction. With increasing affluence marble began to appear in the late 1970's when it became very common to find entire houses covered with expensive imported and local marble.

It should be noted that the old methods of construction were unable totally to meet the increasing demand for houses and new methods were introduced alongside the old, and included the use of precast panels, readymix concrete and entire pre-fabricated sections. Several factories have been erected to produce such materials and the manufacture of building materials was examined in Chapter 5. Raw materials for pre-cast and ready mix concrete are supplied locally but for pre-fabricated forms they tend to be imported, although they are shaped locally.

Other building materials such as electrical, plumbing and sanitary ware, glass, decorated plaster and paint materials etc. are almost all imported.

Concrete is the predominant building material used in modern houses in Jeddah as shown in Table 7.2.

Table 7.2 : Building Materials Used in Jeddah 1980

	Concrete ⁽¹⁾	Stone	Mud	Block & bricks (2)	Others	Total
Construc- tion	3,272	-	-	1	-	3,273
Alter- ations	620	-	-	-	-	620
Compound walls	942	-	-	1	-	942
Total	4,834	-	-	2	-	4,835

Source : Ministry of Finance, Central Department of Statistics.

(1) Block and bricks are involved in construction

(2) only approved applications.

Housing Rents

Throughout the history of Jeddah, up to the early 1970's, there was little change in housing rents. It is interesting to note that during this period there was a tendency for the owner to actually lower rents over time in an attempt to encourage tenants to stay. An indication of the relatively static position for centuries, this state of affairs has disappeared in the early 1970's. The increase in oil revenue and expenditure led to the arrival of migrant workers for employment in private and public sectors in numbers which could not possibly be absorbed by the existing housing supply (see also Chapter 3). This led to a massive increase in rents, encouraging landowners to build more houses for rent. Unfortunately little attention was paid to structural quality and today many of the buildings then constructed are substandard. In addition there was the appearance of the squatter areas discussed earlier in this chapter.

Rent during the period 1973-75 increased 10-fold over the rate of 1971-73, as indicated by fieldwork data shown in Table 7.3. This situation led to difficulties between landlords and tenants, as the landlord would often try to vacate his premises in order to re-let at the new, inflated rate. The law tends to favour tenants and it is difficult to force them to vacate unwillingly. In an attempt to reduce the tension, the government has several times allowed legal rent increases but these were insufficient to bridge the gap between free market rents and established agreements. In 1982, landlords were given freedom to fix rents.

In addition to pressure from demand, building materials and land prices have also risen significantly, as considered below.

There is, in fact, a great diversity in rent levels from one building

Table 7.3 Housing Rents in Jeddah 1972-82 (in S.R. per year)

Type of Dwelling	1972			1975			1982		
	M	Max	Av	M	Max	Av	M	Max	Av
Traditional	1,800	3,000	2,400	10,000	15,000	12,000	11,000	16,000	13,000
Flats	4,000	8,000	5,000	25,000	70,000	45,000	22,000	60,000	35,000
Villas	6,000	20,000	10,000	80,000	200,000	100,000	70,000	170,000	90,000

Source : Fieldwork Survey 1982-83.

to another, according to the geographical location, quality of house, availability of services, size and location within the district. According to geographical location, houses in the northern sector of the city command the highest rents. This is partially because this part is more modern and it has more facilities available, as mentioned in an earlier chapter. In this sector, the western part contains houses of the highest rent value in the entire city. After the northern sector, the eastern sector commands the next highest level of rents, followed by the southern.

The quality of the individual house is obviously another important factor. The better the quality, the higher the rent. For example, a standard flat in 1982 would cost S.R. 30-40,000 per annum, a de-luxe flat cost 40-50,000/p.a. This holds true for all types of houses.

The availability of services both to the district and within the house is among the most important factors. Rents vary tremendously to reflect the quality of amenities e.g. a house which lacks electricity cannot be let, whereas one which is lacking in water can be let, although at a reduced rent. Rents are also determined according to size, the larger houses commanding a higher level of rent.

Finally access to main roads and location on better quality roads is important, those with good position and access commanding the higher rents. Wind direction must also be taken into account and houses facing north or north-west are more desirable and therefore more expensive.

In Jeddah, rented properties can be divided into several categories according to type of property. The Red Sea style houses which are the oldest and most neglected are occupied mainly by labourers. Since these properties are often subdivided to house several families, overcrowding occurs. These houses in the CBD attract low income tenants working in the area and rents here are particularly low.

New buildings, i.e. those built since the late 1940's (including traditional houses, flats and villas) have a variety of rent levels. Traditional houses usually command lower rents, particularly the very old ones. Most of the tenants are foreign labourers, or Saudi citizens of low income, some of which are old and have resided in the property since the 1950's. These houses too are often over-crowded and often constitute a health risk to the tenants, especially those occupied by foreign workers. Flats are in the next highest rent category and numerically they are in the majority as noted above. Older flats, scattered throughout the old quarters, represent the lowest levels of rent. Tenants are a mixture of Saudis and non-Saudis with the proportion of Saudis being greater than that found in traditional houses. Most of them are in the middle to low income bracket. In addition to the huge demand for flats for residential purposes, there is a considerable requirement for flats for commercial usage.

Finally, villas represent the highest rent level, as shown in Table 7.3. This is because villas within the city are built to a higher standard for the most wealthy group and have additional facilities such as gardens and garages.

Rent trends, as shown in Table 7.3 show that traditional houses have maintained their value because of increased demand, mainly from labourers, whilst villas and flats showed a slight decrease in rents by late 1982 because supply then started exceeding demand, one result of the activity of the REDF which will be discussed later.

Construction Costs

Construction costs differ from one building to another according to the type of dwelling (traditional house, flat, villa), size of dwelling (the larger the building the cheaper the cost), location and

access. For example, a house built within the old quarters of the city where access is very difficult will actually cost more to construct than a house with good access. The type and price of construction material used, since there is a variety of construction materials available in the market, can also be significant. In this context, the prices of most imported building materials in Jeddah are cheaper than anywhere else in the Kingdom because of the additional transport costs involved inland. For example, the 1979 price of a sack of imported cement in Jeddah was SR 15.33, in Riyadh 18.08 and in Abha 18.13. The price of kg of reinforcing bar in Jeddah was SR 1.38, Riyadh 1.60 and Abha 1.77. ⁽¹⁴⁾ The determining factor in construction cost of any building is the floor area. The price per sq.m. differs according to the type of house and its quality. There are three major types; standard, luxe and de-luxe, each with its own price level, as illustrated by Table 7.4. The average construction cost of one room in a standard dwelling is between SR. 15,000-16,000, whereas the traditional house would cost about 9,000.

Table 7.4 : Construction cost per square metre (S.R.) Jeddah 1982-83

Type of dwelling	Standard	Luxe	De-luxe
Flats	1,200 - 1,500	1,600 - 1,800	1,800 - 2,200
Villas	1,300 - 1,600	1,700 - 1,900	2,000 - 2,500
Traditional houses	600 - 900	-	-

Source : Fieldwork Survey 1982-83.

Real Estate Development Fund (REDF)

The Real Estate Development Fund is one of the major factors affecting the residential function of Jeddah during recent years. Before 1974, housing throughout Saudi Arabia was produced entirely by private

enterprise. Except for finance available through individual commercial bank loans, on normal commercial terms of lending against security in land or property, there was no public sponsored financial system or mortgage finance available.⁽¹⁵⁾ Housing construction was therefore limited and available only to those who owned land and had the ability to pay. In such a situation it was impossible to meet the great demand which occurred in the beginning of 1974. In order to some extent to solve the problem, the government established in mid 1974 the REDF as a financial institution attached to the Ministry of Finance and National Economy. The objectives and terms of reference of the institution can be briefly outlined as follows:

1. The main objective outline is to provide long-term, internal free loans to middle and low income Saudi landowners for the purpose of private housing construction, in addition to loans to Saudi individuals and commercial enterprise for relevant investment purposes.
2. The fund is administered by a committee appointed under an order from the Prime Minister.
3. The major function of the REDF is to provide long-term loans to individual house loans and investment loans under the following stipulations:
 - A. Individual loans:
 - a. Loans available to land owners for house building, and with Municipality building approval.
 - b. Interest free loans of up to 70 per cent of cost available with one year's grace repayable over 25 years : maximum S.R. 300,000.
 - c. Borrowers must produce evidence to commercial bank manager of title to land along with building approval. Manager can make an immediate 10 per cent payment.

d. Building work to be supervised by an approved, registered agency.

B. Investment loans:

Initially, loans were not to exceed 50 per cent of a total cost, to a maximum loan of SR 15 million, repayment period 5 years. A new limit of SR 10 million was introduced in 1978 enabling more Saudis to get loans over 10 years. The main objectives of these loans were:

- a. create more houses
- b. encourage Saudi investors to participate in creating bigger house complexes.
- c. the building of more commercial premises.

However, loans for the construction of private residences represent 99 per cent of the total number of loans awarded, and 95 per cent of total value of the loans financed by REDF during the last seven years.⁽¹⁶⁾

The REDF depends for its existence on ever increasing government grants. For example, the REDF was first established with authorised capital of SR 250 million. This was substantially increased to SR 33,800 million in the Fiscal year 1977-78, increasing the Fund capital in about four years by 135 times. Total authorized capital reached SR 51,100 million by the end of the Fiscal year 1981-82.⁽¹⁷⁾ As a consequence of the construction boom that followed the taking up of the increasing loan capital available there appeared a large number of To let notices around the city, particularly during the latter half of 1982. Since 1982 the number of such signs has increased.

This surge in building was one of the more important results of the REDF. However, it is necessary to look at the other side of the coin. As mentioned earlier, loans were available only to those who could prove title or ownership of land which limited aid to a small number. Further, loans were started at a time when land prices were

inflated due to the increase of oil revenue and it was extremely difficult for ordinary people to buy land. As mentioned earlier, much of the grant lands were restricted to land in remote areas. Therefore, the REDF was obviously of help to only a limited number of people. A severe housing problem still existed for the majority, aggravated by the rising and high level of rents (Table 7.4).

Another problem was that loans were available only if water, electricity, telephone etc. were available on site, but such essential services were limited to areas close to the existing residential development. A large number of houses were built in areas which did not provide one of these essential services, reflecting an unreal relationship between the fund and the government ministries.

Allocation of fund differed enormously between cities, with Jeddah receiving less overall than Riyadh as can be seen from Table 7.5.

Table 7.5 Private Housing loans for the period 1975-76 - 1982-83.

Fiscal Year	No. of loans Jeddah	% of Total	No. of loans Riyadh	% of Total	No of loans Makkah	% of Total	Total
1975-76	1,343	3.9	7,851	23.0	1,811	5.2	34,189
1976-77	2,536	5.4	11,954	25.4	2,555	5.4	46,955
1977-78*	322	8.4	1,023	27.0	198	5.2	3,832
1978-79	1,369	4.0	11,903	34.6	1,049	3.0	34,407
1979-80	1,523	4.6	7,541	22.7	719	2.2	33,190
1980-81	1,459	5.1	5,836	20.4	1,258	4.4	28,593
1981-82	1,939	6.2	6,081	19.5	1,638	5.3	31,133
1983-83	1,950	-	8,272	-	1,281	-	-

Source : Real Estate Development Fund, unpublished data.

* The Fund was closed for nine months in 1977 in a government drive to cut inflation by slowing government expenditure.

Although there is virtually no difference in size between cities (Riyadh with a population of 666,840 and Jeddah 569,204 in 1974 and in 1980, 1,184,000 and 1,014,000 respectively)* Jeddah received only 5.3 per cent of the total REDF loans, while Riyadh received 24.5 per cent. It is interesting to note that Jeddah received about the same amount as Makkah, although Makkah had only 366,801 inhabitants in 1974 and 706,000 in 1980. In this sense REDF operations were inequitable.

The Fund should have adapted two systems rather than one. The first, the same as that operating at present, but a second devised for those who do not own land. This could be organised through the collaboration of the Fund and other relevant government Agencies such as the Municipality, Ministry of Public Works and Housing, Ministry of Planning etc. It is essential that these various ministries cooperate in allocating land since all Saudi citizens are eligible. They should together decide on site allocations and the installation of services. The Fund would then be able to provide funds either for the individual, or for cooperative societies to enable houses to be built.

Housing Need

In principle, each settled household should have a permanent house of an accepted reasonable standard. The satisfaction of housing needs is of top priority since it creates incentives for balanced growth and improves living standards thereby increasing the efficiency of the productive population. Moreover, housing is a sector of development which affects directly and without exception the entire population of any community. (18)

In general, housing need in Jeddah can be divided into three periods according to the level of need. The first period, since early times up to 1973 was one in which there was no great need for housing

* Population Census 1974 and Ministry of Planning and SDDF.

and the demand and supply factor was stable. The second period, from 1973 up to 1982, was one of great demand for housing. As has already been noted, a rapid increase of population is the major reason for the city having to face such grave problems of housing shortage during this period. The housing situation in this period was rapidly worsening and the measures taken have not produced any satisfactory results. For example, the estimated dwellings required in the Five Year period Plan 1975-80 for Jeddah were 40,000 units. ⁽¹⁹⁾ From that information available we see that approximately 10,000 standard or better urban dwellings were constructed up to 1980 (this including units of the still vacant Jeddah "rush" programme and individuals' private construction financed through REDF). The third and current period started in late 1982 after which the situation of housing needs started to improve. This can be attributed to the tied housing provided by several government agencies (see below), large commercial companies with various sizes of housing compounds and to the government subsidy through REDF.

Although, even with the present aggregate availability of housing in the city, it does not mean that housing needs have been met, since often the vacant unit carried too high a rent for the majority of people. Accordingly, the housing need at present is demonstrated primarily by all those housing units characterised by slums and semi-slum areas such as Al Sabeel and other areas scattered in different parts of the old quarter of the city, in addition to some of those units located in the squatter areas mentioned earlier in this chapter. These dwellings represent a large and most urgent unmet need which must be taken into consideration. According to the 1978 socio-economic survey, 20 per cent of the total dwellings of the city were categorized as in a bad condition. This also can be used as an indicator of the need to create still more housing units, with the financial support of the government, especially

for low class and lower middle class people. Moreover, the improvement of the economic status of individuals and families and changes in social habit are increasing demand for all housing, especially good quality housing. For example, according to the 1978 socio-economic survey, in 70 per cent of cases accommodation amounted to more than one room per person, compared to only 26 per cent in 1971. Such trends will continue in future and more houses have to be designed to meet them.

The absence of reliable and up-to-date information concerning all aspects of housing, such as headship rate (head of household) number of housing units, condition of houses etc. makes any study in predicting the housing needs of Jeddah a very difficult task. However, as estimated, the total number of dwellings in Jeddah in 1982 was 250,000 units. Therefore, the overall housing needs for the time being are 250,000 units.

Future housing needs for Jeddah for the end of the fifth year of the Third Development Plan 1985 were estimated for a projected population of 1,836,053 (population estimate by Municipality for 1982 1,200,000) based on the average annual percentage increase of 11.4 which occurred between 1974-78. This increase of population will be accompanied by an increase of households, and thus the estimated needs could be around 132,511 based on household size of 4.8.

It is worth noting here that in Jeddah there is no recognizable seasonal fluctuation in the housing demand, unlike in Makkah and to some extent in al-Medina, where demand is so great during the Pilgrimage season that prices are directly affected. As a consequence, landlords tend to leave properties vacant for most of the year and let them during the Pilgrimage season only.

Land Values And Land Speculation

In Chapter 4 land value was used as one criterion for delimiting the CBD and it was shown that the CBD contains the highest land values in

the city, although within the CBD they differ according to location and other factors (see Chapter 4).

The purpose of this section is to study land value in the residential area and its effects. In general, the price of land differs according to geographical location with the northern section of the city, particularly the west section, containing the next highest land values in the city. This area is considered as an upper class zone such as Al-Hamra, Al Andalus, Al-Rawda etc. Although the land price averages one sq.m. SR 900-1,500, most of the area is occupied by one to two storey luxury villas reflecting the social standing of the residents. This can be attributed to the proximity to the CBD and the availability of services and amenities. In addition to the factor of proximity of the CBD the price of land increases with access to the two main roads, Medina Road and Prince Fahad Street. The price ranges between 5,000-9,000 according to the proximity to the CBD.

Land values within the eastern* section of the city vary between 500-5,000/sq.m. depending on the availability of services, width of the street, proximity to the CBD and Makkah and University Roads. In this district the price of land can decrease for illegal lands as in the northern Makkah Road squatter area mentioned previously. Finally, the southern part of the city contains the cheapest land. Land here is not desirable to middle class taste mainly because the earliest growth direction of the city was limited to this area, and was ignored by the Municipality resulting in a lack of essential services. In addition, the proximity of the area to the seaport encourages its use for covered or open storage. Obviously this discourages people from using it for residential purposes. In addition, most land here is under dispute

* Land prices in the eastern part, particularly along Makkah Road used to be the highest because of the availability of water e.g. price per sq.m. in the late 1950's was SR 30, while in the northern part it was about SR 20. The situation changed because of the increasing availability of other services plus water.

of ownership. However, the price of land in this section ranges between SR 300-4,000/sq.m. according to the quality of the street, type of use and availability of services. Proximity to the CBD is of considerable importance.

It is clear that the proximity of land to the CBD is of great importance, and most recent studies stress this fact. As indicated by Evans in his theory in the determination of the price of land, all land closer to the centre will be developed and the rent or price of standard dwellings will increase with proximity to the centre. Thus the value of the land which the dwelling occupies will also increase with proximity to the centre. (20) For example, the price of the land on Medina Road could start from less than SR 1,000/sq.m. in the extreme north and over SR 10,000 close to the boundary of the CBD. Moreover, the type of use and number of floors are of considerable importance in the evaluation of land value in certain locations. For example, land along main streets defined for commercial use and multi-storey buildings are more expensive and vice versa.

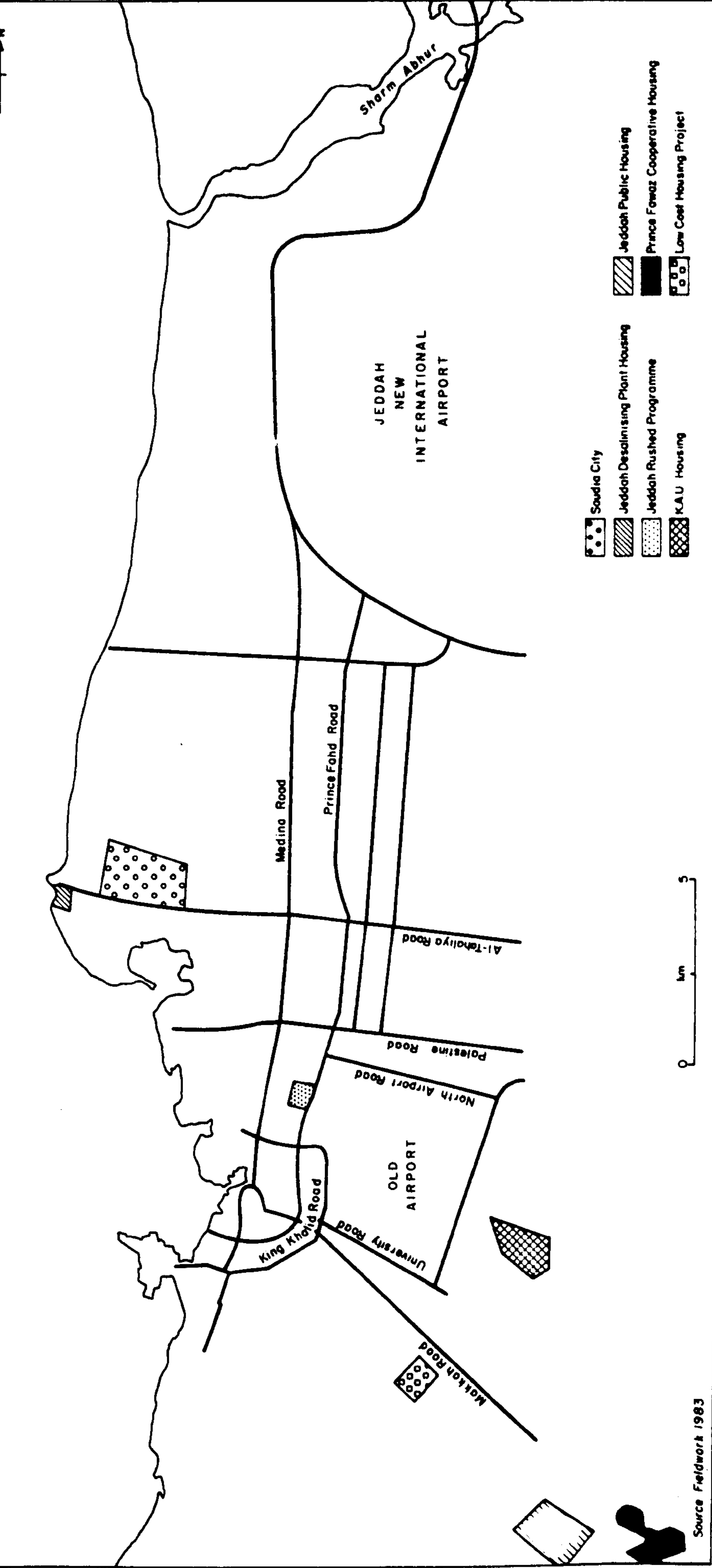
These quoted land prices represent the inflation which occurred post 1973. Prior to 1973 the price of land was reasonable and stable. For example, the price of a sq.m. of land in the late 1960's in al-Sharafeya, al-Baghdadeya, al-Kandara etc. was on average between SR 80-100. This suddenly jumped to SR 1500-2000 in late 1973. This increase in land value was a direct result of increased demand of land, especially those located close to the CBD for the purpose of urban development. After a while the demand and response changed from the development of land to land speculation in which speculators froze land and capital in unproductive activities. This action reduced the possibility of land development because the buyer retained land until it increased in price; i.e. for capital appreciation. In addition,

large numbers of new development layouts are scattered in the suburbs of the city, i.e. the high price rather than high demand areas. The result has been the tying up of capital, unoccupied land and buildings. In these cases the responsibility is that of large landowners looking solely for profit, of the majority of people who lack experience in land and house dealings and the authorities who failed to appreciate the implications of such action. The importance of the availability of services appears clearly not only in associated land prices but also the desire to purchase. The municipality has the right to prevent large landowners selling land that do not have main services installed but due to the negligence of the authorities, both intentional and accidental this control is insufficiently exerted. Compulsory purchase for widening streets and supplying major services is often considered to be an important factor in the increase of land prices. On the other hand, in widening streets, the common change of use from residential to commercial increases the value and price of land along the street and in surrounding areas. The best example of this is Prince Fahad Street. Moreover, any decision made by public or private sectors to develop any land for any purpose can raise the price of land around the new developed areas. For example, the erection of both the Prince Fawwaz Cooperative Housing and the Jeddah Public Housing project in the south-east of the city (Fig.7.6), which was once considered a remote area, resulted in a very great price rise between 150-400 per sq.m.

Major Government and Cooperative Housing Schemes

In addition to REDF backed schemes since the early 1970's several government and cooperative housing schemes have been erected either directly through the Ministry of Housing and Public Works, or government ministries and organization and cooperative societies. The following is a brief discussion of the major elements.

Fig 7.6 DISTRIBUTION OF MAJOR GOVERNMENT AND COOPERATIVE HOUSING SCHEMES



Source Fieldwork 1983

1. Low Cost Housing Project

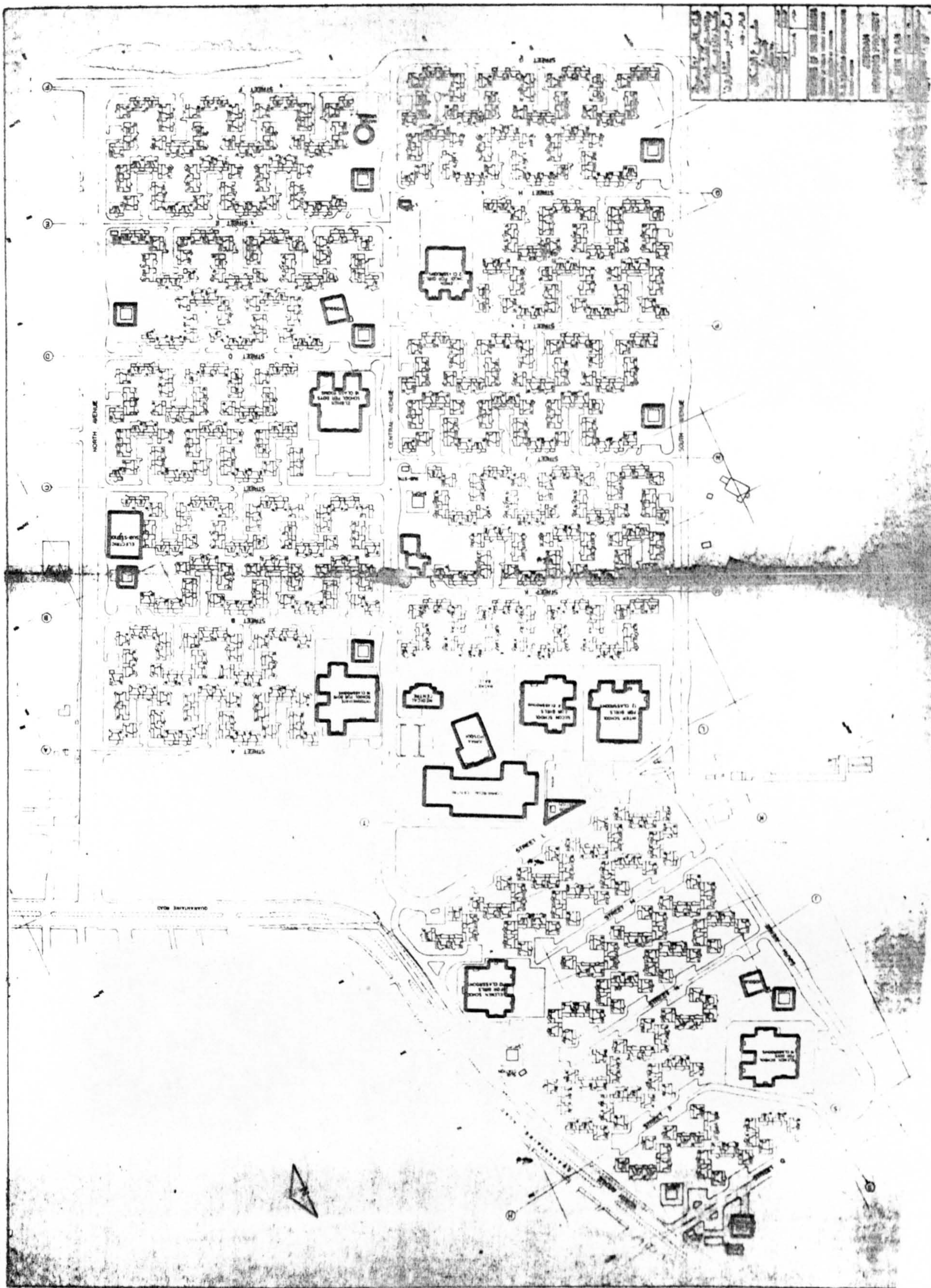
This housing project is located about 8 km south-east of the CBD, on the southern side of Makkah Road (Fig. 7.6). This was the first government attempt to solve housing problems in Jeddah and carried out by the Ministry of Finance under the supervision of the General Housing Department. The main purpose of this project was to build low cost housing for low income people. In 1972, the project began to build 750 small housing units, the size of each being 70-80 sq.m. and consisting of 3 and 4 rooms of small size 3 x and 3 4 m. kitchen, two bathrooms, storage and courtyard of 10 x 6 m. (Plates 7.12,7.13). The project was designed to provide a shopping centre in addition to 11 shops, schools of all levels for boys and girls, mosque, library and medical centre (Fig.7.7).

The project was started enthusiastically and all villas, in addition to the central facilities were built in less than two years. By the end of early 1973 and 1974 work stopped as a result of inflation which made it difficult for the contractor to finish the work. Shamefully the Ministry failed to reach a completion agreement with the contractor. Most of the work is now finished although the houses remain unoccupied. There is still a chance of finishing this project with only a little alteration to make it available to people of low income of whom some are still living in housing which is unfit for human habitation.

2. Jeddah Rush Programme

The General Housing Department of the Ministry of Finance could not cope with the ever increasing demand for housing created by the rise in the local population and foreign labourers. In order to ensure the provision of adequate housing in the major cities and towns of the

Fig 7-7 Low cost Housing Project



Source: Ministry of Public Works and Housing

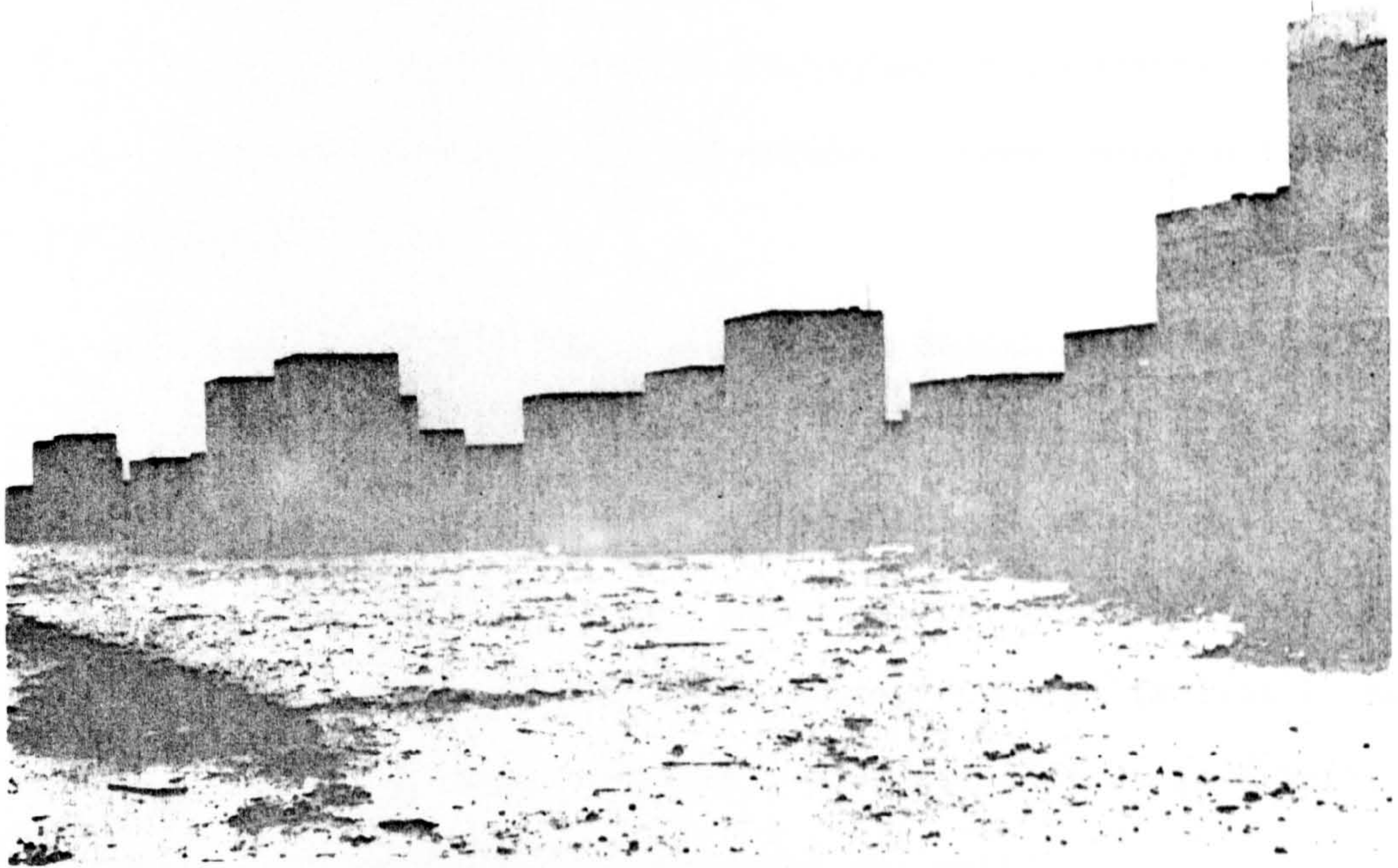


Plate 7.12: View of incomplete low income housing on Makkah Road.

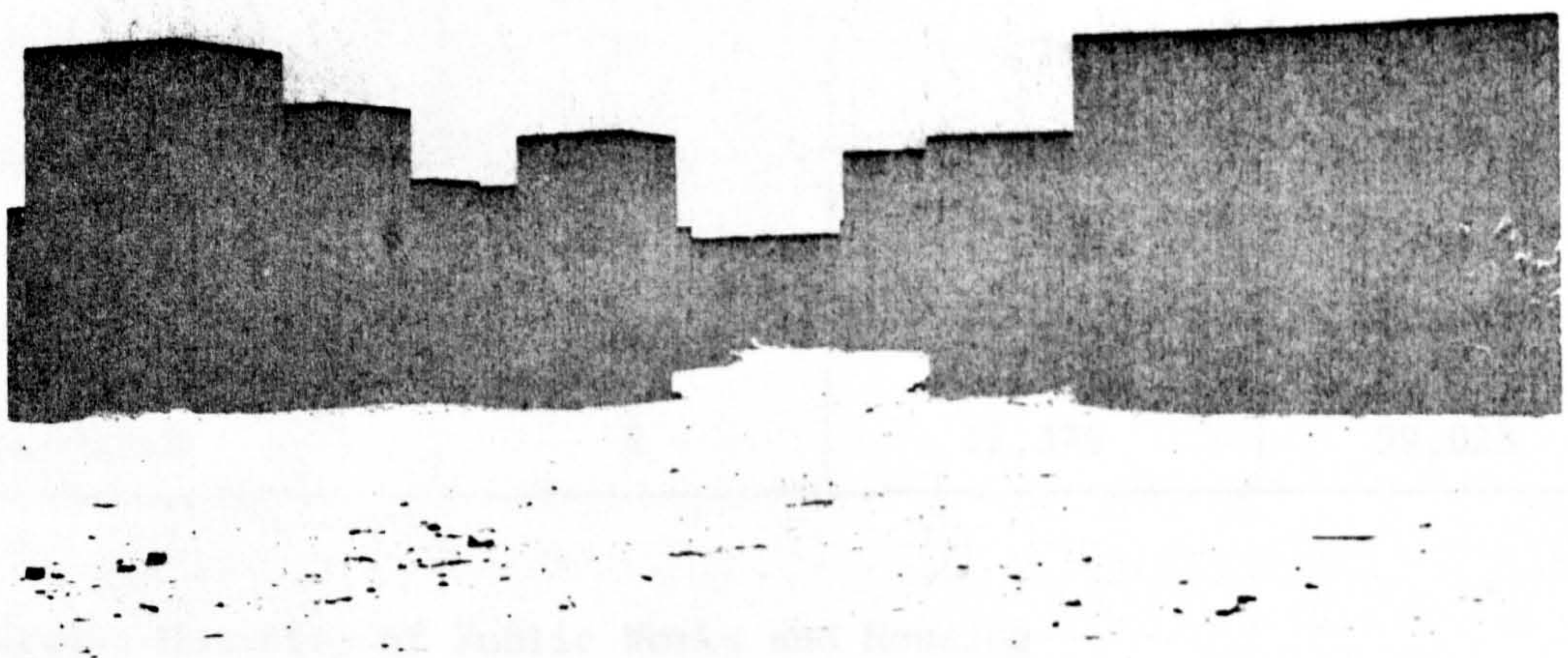


Plate 7.13: North view of the same project.

country, the Ministry of Public Works and Housing was set up in October 1975.⁽²¹⁾ Since then the Ministry of Housing has sponsored various large-scale public housing projects throughout the country, the houses being assigned to qualified low and moderate income house-holders during 1975-77.⁽²²⁾

The Jeddah project which is known as Jeddah Tower was completed by 1980/81. It consists of 32 high-rise apartment buildings, each rising to 18 storeys with each storey containing 4 apartments. Each unit, which covers about 232 sq.m. contains six rooms and other house amenities. The project is provided with most central facilities such as playing areas, shelters, carparks, shops and offices (see Table 7.6 for the number of each facility and area per unit).

Table 7.6 Jeddah Tower Facilities

Description	Total	Area per unit sq.m.	Total area sq.m.
Shelters	32	869	27,820
Playing Area	8	4,008	32,067
Public parks	828	39	32,308
Shops	224	139	31,037
Offices	72	161	11,578
Apartment carparks	1,936	44	85,383
Apartment	1,936	232	449,021
Towers	32	18,674	597,575
Platforms	8	12,379	99,028

Source : Ministry of Public Works and Housing

In addition, electricity, water, telephone and sewage are all available on site. A sewage treatment plant has been built on the old airport to recycle effluent for a public gardens project. Since this housing project was located in close proximity to all the existing city's services, health and educational services are readily available. However, the siting of such a major project on a busy road (Prince Fahad Road) brings its own problems, particularly traffic problems and a new major relief road has had to be built south of the project - Shari Janub al-Eskan. It is clear that the project is equipped with all requirements and is ready to be occupied, but up to the present time, 1983, it is still unoccupied. This is the second non-functioning housing project carried out, this time finished but yet unoccupied. There are several reasons behind such a phenomenon which will be discussed later.

3. Jeddah Public Housing Project

The location of this project lies about 13 km south-east of the CBD, on the southern side of the Jeddah-Makkah Motorway (Fig.7.6). Project finance was assigned in 1978, but work delayed to 1979, because the project was transferred from the original site and the new site had to be prepared to be ready for construction. Work was completed in three years. The project consists of 188 buildings with a total of 3,420 apartments. Each unit has six rooms in addition to other house amenities. There are four types of buildings, each consisting of a different number of storeys and apartments (see Table 7.7).

Table 7.7 Types of Buildings, Jeddah Public Housing Project

Type of building	No. of buildings	No. of floors	No. of apartments	Total
A-1	76	8	24	1,824
A-2	38	6	18	684
B-1	40	8	16	640
B-2	34	4	8	272
Total	188			3,420

Source : Ministry of Housing and Public Works

The project is provided with several central facilities needed as shown in Table 7.8.

Table 7.8 Jeddah Public Housing Project Facilities

Description	Number	Area per unit sq.m.	Total sq.m.
Blocks	9.5	88,680	842,460
Apartments	3,420	241	824,220
Paving Slab Area	9.5	14,320	136,040
Covered car park	38	1,444	54,872
Playground	38	321	12,198
Covered walkway	38	324	12,300

Source : Ministry of Public Works and Housing

The total cost of this project is SR 1,769 million broken down as follows:

Total cost	SR 1,769 million
" " of the apartment	" 1,041 "
Cost per dwelling unit	" 517,000 "
" " " without services	" 304,000
Cost per sq.m.	" 2,140
" " " without services	" 1,260

Source : Ministry of Housing and Public Works

As mentioned earlier, the project has been completed, but here again has not yet been occupied.

From the above mentioned facts it is evident that the three major housing projects for Jeddah have failed to produce the extra housing required for one reason or another. The first project faced financial difficulties but although there was finance available it was not directed correctly. The project should have been completed and utilized, although house sizes were small, as with little alteration the houses could have been enlarged. To balance the disadvantage of

size they have the advantage of being single family units entitling occupants to greater rights and providing them with more privacy. In addition the location of the project was attractive on a main route and its easy proximity to places of work.

Regarding the second project, the concept of the project and its location were unacceptable. The concentration of dwellings in such high rise buildings is not acceptable to most Saudi people who prefer single family units for more privacy. This does not mean that there is no high rise development need in the city, the balance of what is available must allow the people the right to choose. Until now the authorities do not know to whom this project should be allocated. A plan was suggested to transfer Saudi citizens from al-Sabeel quarter but in addition to the unsettled financial problem the writer believes it is very difficult to achieve this translocation because most al-Sabeel people live in very low cost traditional houses containing courtyards, including animals etc. It would be unwise to transfer such people to a completely alien environment, and would cause considerable harm. Compared with this, the first project would seem quite a reasonable design. Such a huge project should have been the result of careful social study to define the type of building to fit the Saudi environment and culture rather than simply to import new but alien design concepts.

The third project started even before the second project was complete and occupied, even though problems occurring in the second project could be already recognised and to some extent lessened, e.g. the number of storeys have been reduced by half, in addition to the construction of buildings containing only 8 flats so avoiding the problems of congested high rise building. In this context, it is worth noting that after this project the Ministry of Housing and Public Works

changed its approach to the problem completely. For example, the Medina housing units were originally designed as apartment buildings, but plans were changed to accommodate a recent royal decree requiring new housing to be built in villa form.⁽²³⁾ However, in this project, even though it was completed, most essential services, water, sewer, telephone have not been provided which is considered one of the most serious problems facing the city.

4. Saudi City

This residential development located about 9 km north west of the CBD on the Red Sea coast is of a totally different type to those previously described. It occupies about 1.5 million sq.m. containing 3,377 dwelling units of different building sizes, 7 storeys, 3 storeys 2 and one storey. The project which began as a private investment was taken over in 1977 by Saudi Airlines (SAUDIA) in order to house its huge foreign labour force. When Saudia bought the project it contained 1,200 dwellings and in 1982 another 2,177 dwelling units were added. Saudi City is virtually a city within a city in terms of the services and amenities available within in. Saudi City depends on itself for most services, and does not call on many general Jeddah services. For example, it has a desalination plant with a capacity of 1.2 million gallons a day. This will be stored at the Red Sea plant in 5 million gallon tanks before being piped underground to the 1.2 million gallon water tower in the centre of Saudi City.⁽²⁴⁾ Electricity is provided by three gas turbines, each with a capacity of 24 megawatts of electricity. Moreover, the City is provided with 2.5 million gallon ponds to purify the sewage which will feed the compound's separate irrigation water system. In addition, the City is equipped with a mosque which can house 450 worshippers, 300 incoming telephone lines and 4,000 extensions, a shopping centre consisting of supermarket, department store, restaurant and bank, central sports complex, gas station, maintenance

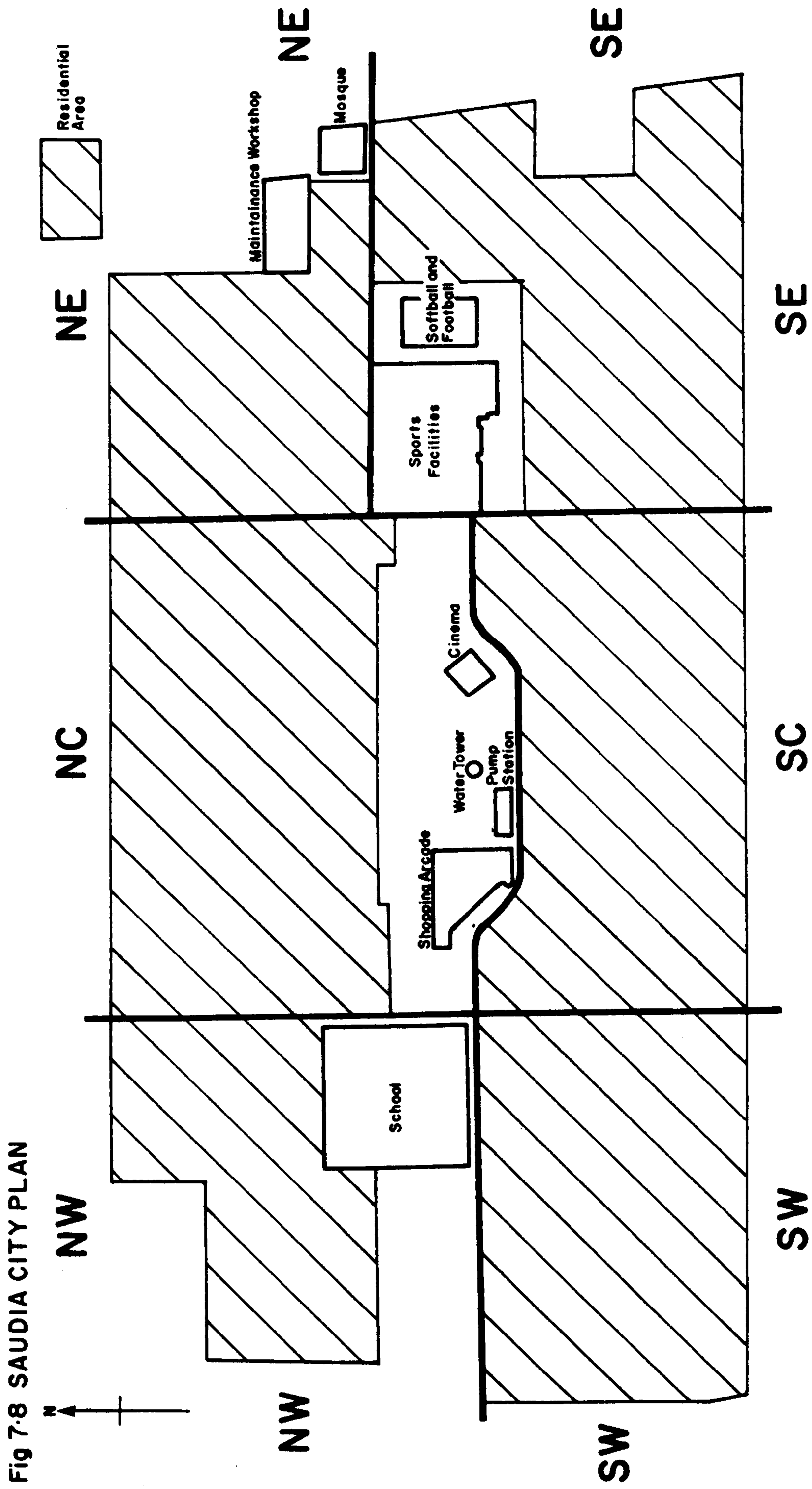
workshop and cinema (Fig. 7.8). The city does not have a hospital, therefore it has to rely on Jeddah's health services.

There is a future plan to increase the capacity of the city in terms of housing to add 616 dwelling units, a school with 200 classrooms to house 3,000 students, a gas turbine electricity generator with a capacity of 24 megawatts, a further desalination unit of 500,000 gallons a day, sewer treatment plant of 500,000 gallon and 2 small mosques. (25) This special provision for a clearly identifiable employment group, as with the University, is considered later in terms of its implications for Jeddah.

5. Prince Fawwaz Cooperative Housing

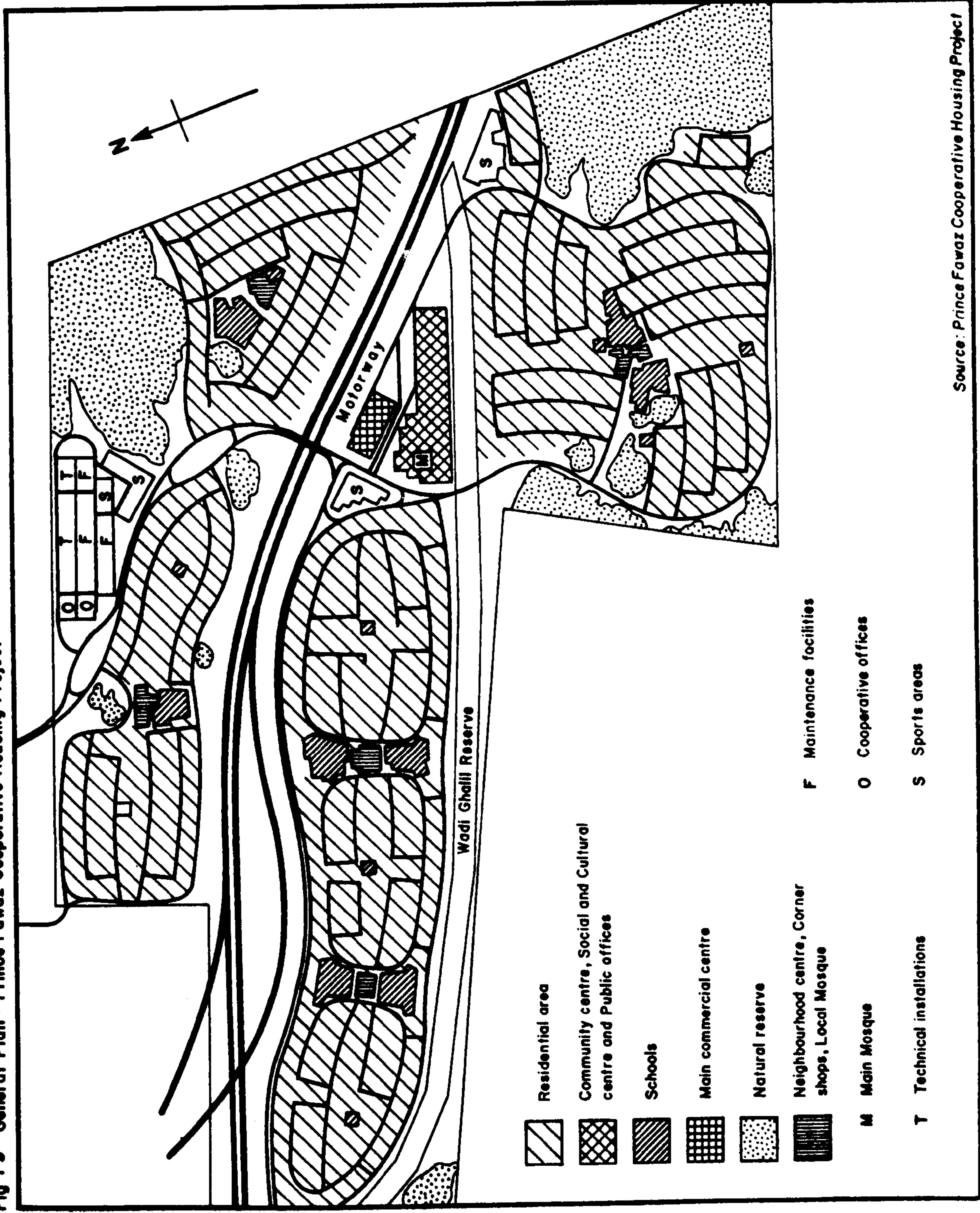
This housing project is located about fourteen km south-east of the CBD, immediately east and north-east of Jeddah Public housing project. Together they may be considered as a satellite major nucleated urban development which will increase the direction of growth to this part of the city. (Fig. 7.6).

The principle of cooperative societies for the promotion of housing is of course of worldwide application. Within the Kingdom it has received consideration in only two cases; Prince Fawwaz Cooperative Housing at Jeddah and the proposed Prince Faisal Housing Society in Riyadh. Such a society legally comes under the supervision of the Ministry of Labour and Social Affairs according to cooperative law (Law No. 26 dated 25 June 1962) but since there has since been created a specific Government Department for Housing (within the Ministry of Public Works and Housing), then the proposed cooperative housing societies should come within the overall responsibility of the Ministry of Public Works and Housing. (26) However, Prince Fawwaz Cooperative Housing is now being pursued through the REDF.



Source: Saudia

Fig 7-9 General Plan - Prince Fawaz Cooperative Housing Project



Source: Prince Fawaz Cooperative Housing Project

The project started as an idea in 1975 by a small group of KAU members in order to solve their housing problems which occurred in the early 1970's. The size of the project has been increased several times to meet the great demand of such cooperative housing until it reached its final size, housing 1,200 families. The project covers a total area of 5.7 million sq.m, divided between several uses, 1.3 million sq.m. for dwelling units, 1.5 million sq.m. for the motorway and water channel, 2.6 million sq.m. for roads, gardens and open areas and 250,000 sq.m. for public buildings (Fig.7.9). Each family may choose from three sizes of two-storey villas; large (6 bedrooms) and a total area of 435 sq.m, medium size (5 bedrooms) and a total area of 408 sq.m. and small size (4 bedrooms) and a total area of 361 sq.m. The total population of the township will be about 10,000 inhabitants. (27)

When the project is completed it will contain many necessary services such as 9 playgroups, 10 primary schools, one intermediate and secondary school for boys and girls, main shopping centre in addition to 5 small shopping centres and main mosque (Fig.7.9).

The project was planned to be completed by early 1980, but from visiting the site in 1982 and 1983 one can say that for the project to be completed with all services, it needs another 3 years (1986). Although the project is not completed, some of the units in the southern side have already been occupied without most services (water, sewer, telephone, roads etc.). The reasons for the delay in completion can be summarized as follows:

1. A change of location because the original site was taken by the Ministry of Public Works and Housing for the erection of the Jeddah Public Housing Project (Fig.7.6).
2. The redesigning of the original house plans to meet the needs of Saudi families.

3. A dispute between the project and the REDF over the way to receive loans.
4. There were difficulties in finding a suitable construction company.
5. There were delays from subscribers in paying their subscriptions.

In order to be a member it is necessary to pay SR 10,000 and SR 25,000 for a plot. The operators of the project will receive loans from REDF to be repaid by the occupants within twenty five years. The subscriber must pay over a period a total of about SR 325,000 before completion. Although this cooperative was formed to tackle the problems of the mid 1970s as it also remains unfinished it has also failed to meet the needs of the city. However, the completion of this project, together with the Jeddah Public Housing project, will hopefully ease much of the pressure on the city's services.

6. King Abdulaziz University Housing

As mentioned earlier, the creation of Prince Fawwas Cooperative Housing was mainly to find suitable housing for university staff. As shown in Chapter 6 the university has rapidly expanded as it is one of the major employers within the city and this adds pressures on all the city's services, particularly on housing. Rented apartments for KAU staff are scattered throughout the city.

To ease, to some extent, the problem, the university built about 60 prefabricated one-storey houses located southwest of the main campus. Each house, which covers about 160 sq.m, contains five rooms, other house amenities and a small courtyard which has often been used by the occupants to enlarge the dwelling unit.

Such a solution was only partial and the university conducted a comprehensive programme to build a new university town in order to

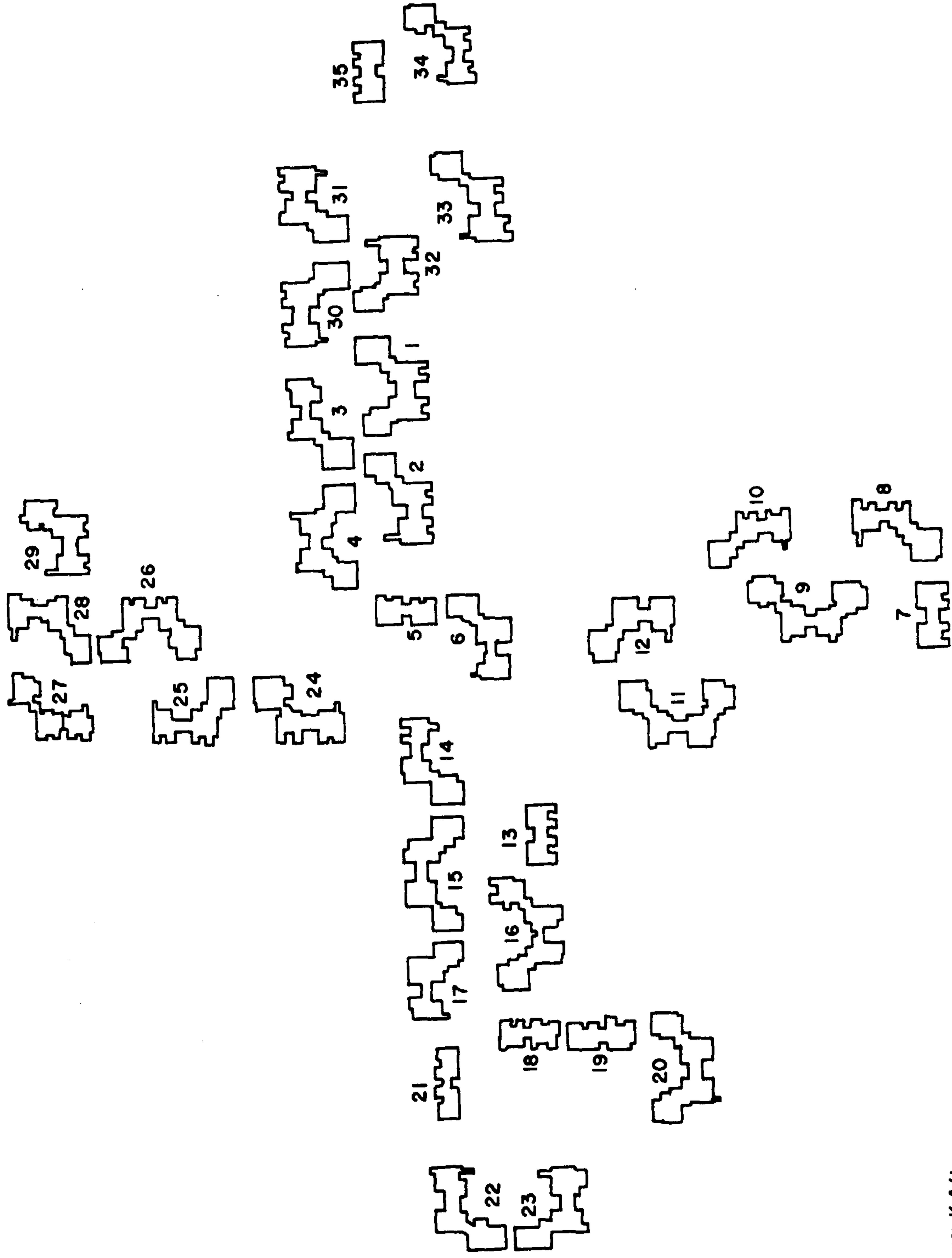
accommodate all its staff and students. Work started and all housing dwellings are complete. But here again, buildings are completed even before the major services are laid out, therefore, buildings stay vacant and the problem still continues. In this context, one cannot accept that such a major cultural educational institution which contains a high proportion of intellectuals should make such a mistake.

The new university residential area is located east and north east of the university hospital about six km east of the CBD (Fig.7.6). The area is divided into two major sections, the staff residential district covering a total area of 504,000 sq.m. and consisting of 53 building apartments (Fig.7.10) with a total of 318 flats. Each flat, which covers about 195 sq.m. contains six rooms and other house amenities. The student residential district covering a total area of 72,000 sq.m. contains 8 building apartments (Fig.7.11) with a total of 320 small flats.

7. National Guard Medical City

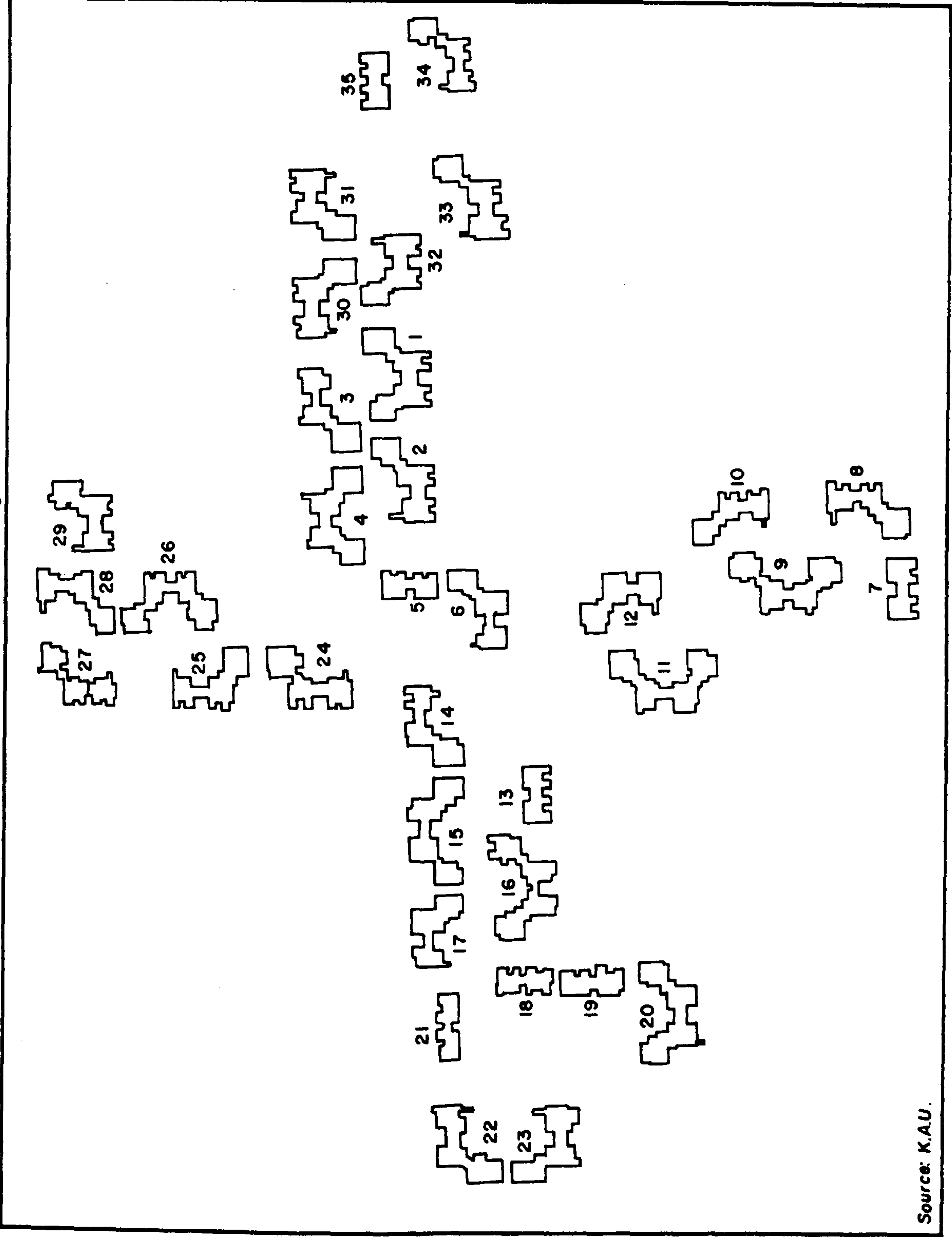
This residential area is located approximately 16 km south-east of the CBD on the southern side of the Jeddah-Makkah motorway. The main purpose of this compound is to provide self-contained living areas for hospital staff and their families within a short, walkable distance from the hospital where they work. Medical City contains apartment blocks of three storeys. There are 225 dwelling units of one to three bedrooms. This self-contained living area, in addition to providing main services, such as electricity, water, and sewerage also provides other facilities required by the residents, such as a supermarket, shops, restaurant, school, play areas for children, sports and leisure facilities.

Fig. 7.10 King Abdul Aziz University : Staff/Faculty Housing



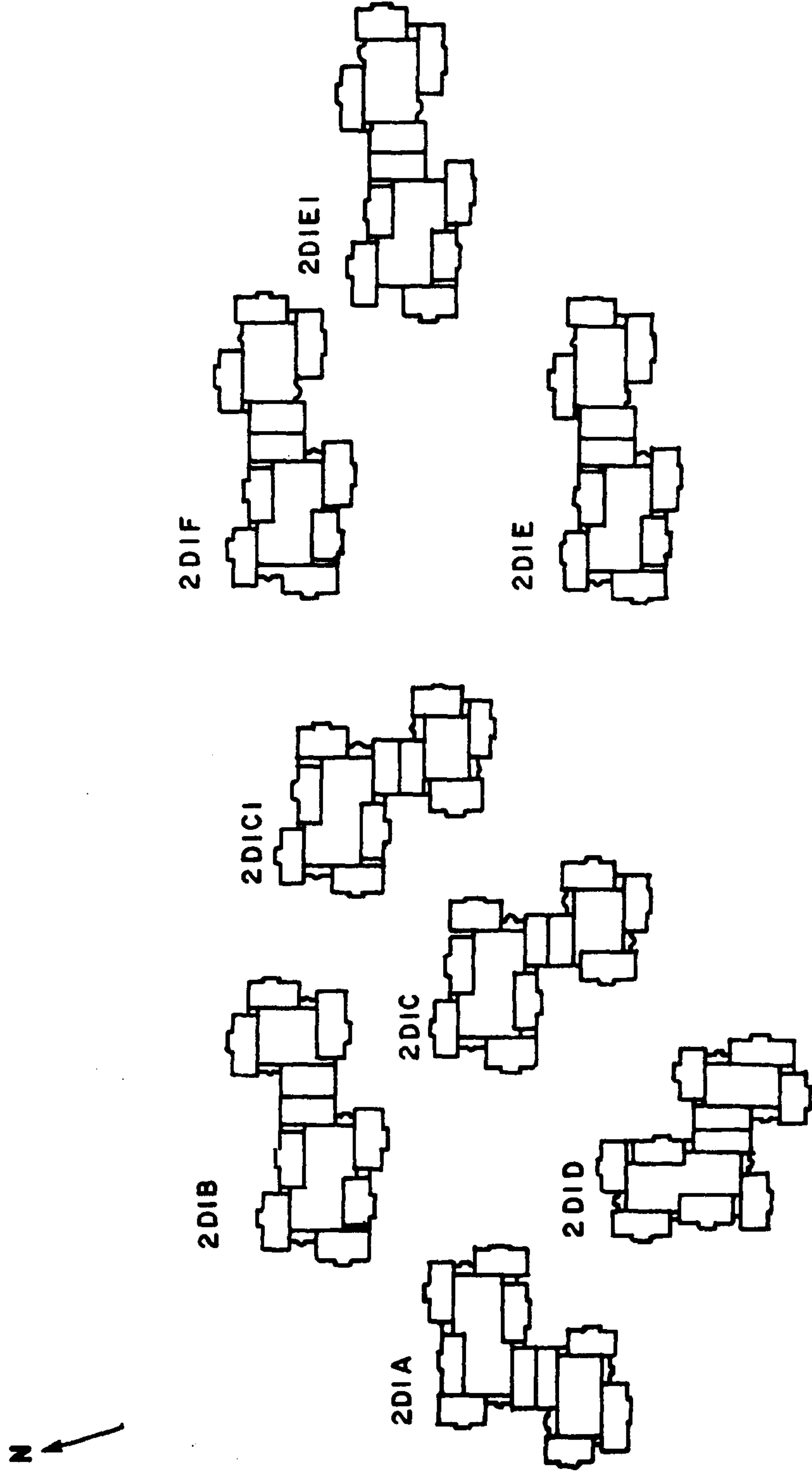
Source: K.A.U.

Fig. 7.10 King Abdul Aziz University : Staff/Faculty Housing



Source: K.A.U.

Fig. 7-11 King Abdul Aziz University : Student Housing



Source: K.A.U.

8. Jeddah Desalting Plant Housing

In 1970, 21 dwelling units were built as a small residential area to accommodate some of the contractor's employees who were constructing the second stage of the desalting plant.

As a result of the increased capacity of the plant and its importance for the city which requires essential personnel readily available at all times, a third development stage was combined with the expansion of the residential area which reached a total of 271 dwelling units; apartments and villas. There are 95 villas of two sizes, large with 3 bedrooms and small with 2 bedrooms. Eligibility was first restricted to technicians and engineers, but the third expansion made it available to all employees. This residential area lies about 9 km north-west of the CBD (Fig.7.6) and consists of several facilities; mosque, community centre and medical centre.

In addition to all these mentioned housing projects there are other housing areas available and scattered throughout the city in varying sizes which were built for commercial purposes.

Conclusion

It can be seen that there has been a great increase in the number of residential units in the city, particularly since 1973 as a result of the increased demand for housing from both citizens and immigrants. In the city five types of housing can be distinguished of varying quality, age and amenities available.

The improvement in the economic situation within the Kingdom combined with large development projects, and the availability of rising disposable income, have all contributed to the great increase in demand for housing land and land prices. This last increase, which was

associated at first with housing development itself, culminated in the speculative involvement by landlords in the property market for profit. This great increase affected directly the rent values within the city, and with the absence of any building societies to help low income peoples led to the emergence of squatter areas, in addition to the appearance of poor quality buildings. Moreover, there is no private sector institution to plan, finance, build and manage housing available in the city or anywhere in the Kingdom. The government backed REDF and government initiated housing projects endeavoured to fill the gap. However, the failure of major public sector housing projects did not help in solving the housing problems, though the long-term loans from the REDF, to some extent have helped to alleviate the problems.

The completion of Prince Fawwaz Cooperative Housing, Jeddah Public Housing and University New Town, in addition to the occupation of Jeddah Tower, will ease the situation further, and moreover it may help to lower average housing rents.

It appears that Jeddah has had virtually all the housing experiences of all other large cities which have grown rapidly. There are however some features which are distinctive. On the one hand the normal migration of wealthy house-owning residents out from traditional locations in the city centre has been rapid and has accelerated since 1973 to form an exclusive low density, high quality area to the north of the city. On the other, the also normal need for low rental accommodation near to places of employment in and neighbouring the CBD has been complicated by the fact that the majority of lower paid service workers are contract-employed non-Arab foreigners (see Chapters 3 and 4). There are no residential areas particularly associated with manufacturing employment. As noted in Chapter 6, the municipality has no financial

or other power to build housing and therefore low-income rented housing until recently was only available in the zones evacuated by Saudi citizens moving "up-market" or in the so-called squatter towns. Governmental provision of such housing has basically only been made for Saudi residents. There is no basic data available for the proportion of owned and rented accommodation but there appear from personal observation three differing trends. First, the proportion of people living in rented housing is affected by the fact that no non-Saudi may be a property owner. Secondly, for a large part of the Saudi population there remains a desire to own its housing - even, at worst, in a squatter area. Thirdly, and contrary to the last trend, a growing number of Saudis in professional occupations now accept "tied-housing" as part of their remuneration, e.g. university, medical, Saudi and SWCC technical staff.

The growth of special housing schemes, especially but not only for major national institutions and corporations appears as a special feature of not only Jeddah, but other cities in Saudi Arabia. These largely reflect a point which appeared in earlier chapters that Jeddah, during the last forty years or so has become, for the first time in its long history tied in with a large national economy.

Lastly, there appears the phenomenon of the squatter areas. Whilst this is not unique to Jeddah it must not be confused with the shanty towns of, for example, Rio Janeiro or Lagos. As in Kuwait, the populations are not composed of unemployed, destitute national migrants fleeing from deep rural poverty but, when of Saudi origin, have been attracted to some aspects of city life and are usually employed there but are both unwilling and unable to submerge themselves in fully urban housing. The governmental provision of low-income housing has not been rapid or particularly efficient, but could have at least lessened the flow to squatter areas. The question of low-rent housing for non-Saudi labourers is complex but remains unanswered.

CHAPTER 7

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CHAPTER 8

TRANSPORT FUNCTIONS

Previous chapters of this thesis have examined and analysed, on a sectoral basis, the main functional activities of Jeddah up to 1982. Transport and communication developments have both reflected and generated such socio-economic activity. This in part is because transport is a key factor in the changeover from a subsistence economy to a market economy in which specialisation and exchange take place.⁽¹⁾

The relevance of this point arises from the changes which have occurred in Jeddah's economic hinterland over time. As noted in Chapter 2, Jeddah as a trading centre and seaport, by definition, always possessed an urban market economy. However, as also recognised in Chapter 2 Jeddah's peninsular hinterland before 1947, although extending beyond Hijaz both before and after the creation of the Kingdom, was predominantly subsistence rather than market orientated. After 1947, and at an accelerating pace, Saudi Arabia has become transformed into what is now almost entirely a market and monetary economy. Jeddah's transport and communication functions have therefore themselves been vastly changed, in degree and scale, as they have grown to serve in some particular ways this transformed national hinterland. Its importance as the main reception centre for Moslem pilgrims arriving by sea and now by air has been maintained. The city has become the chief commercial port for the eleventh largest world airport. Jeddah is by far the greatest commercial, financial, distribution, industrial and service centre in the Western Region and in some respects in the Kingdom. At the same time, traffic generated both by the city's own internal expanding activities and by communications with its national and international hinterlands has grown to the point where transport is

now a major functional economic sector in its own right. Traffic flow within the city and to the region and country now contributes enormously to the commercial and industrial activities in the city and its region, particularly associated with the import and export of goods. This chapter is therefore divided into two main sections, the first of which examines the transport situation between Jeddah and its regional, national and international hinterlands, identifying three main categories of transport - sea, road and air. The second section will examine aspects of transport within the city.

1. Maritime Transport

The heart of maritime transport is the port of Jeddah whose function was of fundamental importance in the growth of the city because the city was originally established in order to function as a port and commercial centre for Makkah and Hijaz (see Chapter 2). The port of Jeddah up to 1947 was incapable of handling the large number of passengers and volume of cargo particularly during the peak Hajj season. The port was technically backward and limited in terms of equipment and facilities available.

The first turning point in improving the port situation began in 1948 when the government recognized the urgent need for improvement. In the same year and up to 1951 several improvements took place, beginning with the connection of Maf Saka island to the mainland by a causeway on trestles, 392 m. long and carrying a road 8 m. wide. A pier which would accommodate two vessels of 170 m. length was constructed, along with a small wharf for vessels of up to 100 m. length. A large wharf of 200 m. was provided. In addition, a barge wharf about 360 m. long and with 2.5 m. of water alongside was used for landing goods carried by barges. Open storage wards, 11 covered warehouses, transit

sheds, customs, shipway and administration buildings were further added. The optimum yearly capacity was 275,000 tons for the pier, 113,000 for the marginal wharf and 212,000 for the barge wharf, making the capacity of the port 600,000 tons of cargo per year. (2)

In 1961 the operation and management of the port was transferred from the Port Directorate to the Ministry of Communication for further development. A major programme was then adopted, Sir William Halcrow & Partners being appointed in March 1964 as consultants to make a feasibility study of the port for the next fifty years; in the meantime to prepare a plan for the expansion considered necessary to cater for the needs of the next ten years (1974). Their recommendations can be summarised thus: (3)

1. An increase of handling capacity of the port to 1.5 million tons per annum by eight new berths which would cater for up to 1974.
2. A further two berths to be built, leading to a final phase in which sixteen berths could cater for 3 million tons of cargo per annum.
3. The construction of a marine workshop to repair and build large vessels up to 10,000 tons.
4. The building of transit sheds on all new berths and the repair and expansion of all warehouse and storage facilities.
5. The provision of completely modernised handling equipment.
6. The construction of modern buildings for all government administration and for a pilgrims' terminal.

The growth of Jeddah has for twenty years been so rapid as to outstrip all plans even before implementation started and this happened with the port, the Ministry of Communications finding it necessary to enlarge the project considerably as follows:

1. Increase the berths from eight to ten, as well as transit sheds and a further warehouse.
2. Increase the number of buildings, roads, open storage areas and provide lighting in open plinths for night work.

Work on the first ten-year stage started in March 1967, and was completed on schedule. By 1973, the port could receive up to 1,200 - 1,300 ships a year, with an annual capacity of 2 million tons of freight, up to 150,000 passengers a year and 1,5 million heads of livestock. A comparison between the facilities which existed before the commencement of the development programme in 1967 and 1971-72 shows the degree of development which took place (see Table 8.1.

Table 8.1 Operational Facilities of Harbour in 1971-72 Compared With Those Existing before Commencement of Development Programme

Operational Facilities	1967-68	1971-72	% of Improvement
Total No. of deep sea berths	2	12	+ 500
Total Length of deep sea berths	498 m	2,360 m	+ 369
Depth alongside sea berths	From 6 to 10 m	11 m	+ 37.5
Transit sheds	nil	6	+ 100
" " area	nil	33,120 sq.m.	+ 100
Warehouse	50,800 sq.m.	61,000 sq.m.	+ 20
Total covered storage area	50,800 sq.m.	94,120 sq.m.	+ 85.2
Passenger Hall	nil	10,250 sq.m.	+ 100
Open Storage area	100 acres	381 acres	+ 281

Source: Ministry of Communication, King Faisal Port, Jeddah 1973.p.16.

In 1970, 1,138 vessels called at Jeddah port, increasing to 1,251 in 1971 a rise of 9.9 per cent over 1970. Imports increased from 883,350 tons in 1970 to 1,045,391 in 1971 i.e. by about 18.3 per cent. The principal imports were flour, rice, wheat, sugar, tea, building materials, cement, timber, iron, fruit and vegetables. Jeddah Port was also an important port for livestock, including sheep, cows and camels. In 1971, 1,164,326 animals disembarked. This increased to 1,303,656 animals, an increase of 11.9 per cent over 1970. (4)

Development of the Port 1972-1982

During these last ten years Jeddah port witnessed continued improvement in its facilities but at the beginning of this period, particularly after 1973, the port presented a gloomy picture, appearing as a major obstacle to the Kingdom's economic development. The vicious congestion problem resulted from the 1973 oil boom, which led to an increase in the number of migrants (see Chapter 3), the increase in the imports generated by national development projects, and finally the increase in imports created by rapidly rising standards of living. The consequence was congestion at all Saudi ports, particularly at Jeddah (Table 8.2). The first attempt to solve the problem was in 1976 with the creation of the Saudi Ports Authority to coordinate all port activities and development. Since then an intensive construction programme has been in progress increasing the number of berths from 10 in 1976 to 35 berths by the end of 1978. (5)

Table 8.2 **Level of congestion in the Kingdom's Ports September 1975 to September 1976**

Port	No. of vessels	Cargo DWT	Average monthly figures		
			Arrival of vessels (No)	Arrival of Tonnage (DWT)	Discharge Tonnage (DWT)
Jeddah	200	900,660	159	386,703	311,637
Dammam	125	747,478	85	362,379	270,246
Gizan	16	29,407	13	38,430	37,258
Yanbu	19	178,790	7	59,618	51,913

Source: Ports Authority, Report 1, 1978, p.15.

The average arrival rate of vessels at this time was such that the queue of waiting ships showed no sign of diminishing. The arrival rate of cargo in Jeddah was 75,000 dwt greater than the average discharge rate per month. The congestion situation in the port of Jeddah was described by Eugene E. Castell's article "Unjamming the Harbour at Jeddah" (Beehive, Fall 1976) as follows:

"Even though most of the incoming cargo is urgently needed ashore to fuel the building boom, the turn around time for a ship is about 40 days at best if it is carrying top priority goods. Delays of two and half to three months are not uncommon, however, and there have been many instances of ships sitting in the harbour for as long as five to six months." (6)

Amazingly, by 1977, this congestion at Jeddah, as well as at other Saudi ports, had been cleared. This can be attributed to the fact that the Port Authority introduced three new types of improvement as follows:

1. Productivity was increased by the introduction of modern handling techniques.

(dwt) dead weight tons.

2. Ro-Ro traffic and container traffic have been promoted.
3. Structural changes were introduced into the Port's regulations.⁽⁷⁾

By effecting these measures the waiting time in Jeddah port by March 1977 was nil.

As noted earlier, by 1978 there were 35 berths, of which there were 21 available for conventional cargo handling and were backed up by 26 warehouses and transit sheds. There were over 1.1 million sq.m. of open storage area. In addition to this the mechanical equipment of the port increased in terms both of number and quality in order to meet the great influx of commodities passing through the port. The number and capacity of the mechanical equipment available in the port in 1977 is shown in Table 8.3.

Table 8.3 The Mechanical and Handling Equipment of Jeddah Port 1977

Kind of mechanical equipment	Number	Capacity
Forklift trucks	350	From 3 tons to over 20tons
Mobile cranes	100	" 10 " " 200 "
Shore side cranes	24	-
Floating crane	1	200 tons
Trailers and tugmasters	150	-

Source: Ports Authority, Report 1 1978, p.23.
Ports Authority, Jeddah Islamic Port 1979, p.4.

In addition to conventional cargo handling, Jeddah Port was equipped with specialized berths such as container 'Roll-on Roll-off traffic' (Ro-Ro), bulk-cement traffic and bulk grain. The productivity of this type of berth is about 4 to 5 times as high as conventional traffic. Since it was apparent that this type of traffic utilised less berthing space this type of cargo handling operation has been encouraged.

Modern container berths have been in operation at Jeddah Port since 1977. A contract for the development of Jeddah's first container terminal was awarded by the Saudi Ports Authority in April 1977 to a joint venture comprising Saudi-Spanish-British companies. A modern container quayside crane was erected within weeks and the back-up area was paved with pre-cast, reinforced concrete slabs. While construction work continued, the necessary systems, procedures and documentation were formulated and staff were trained to implement and use them. This original container terminal, now named Jeddah Container Terminal East, JCT(E) handled its first cellular container vessel in December 1977. A second gantry crane was erected on the berth in April 1978. Further development continued and Jeddah Container Terminal West - JCT(W) - became operational in October 1978.⁽⁸⁾ (Fig.8.1). In 1980, Saudi Arabia was fourteenth in the world container traffic league and Jeddah was nineteenth in the "League of Ports". The main Jeddah Container Terminal is being expanded to include berths 33-37 and there are firm plans for the subsequent incorporation of berth 32. The already extensive examination and storage areas at the berth 16-M terminal are being expanded. At the end of 1981 Jeddah Port was equipped with six container quayside cranes, compared with four container quayside cranes, for both King Abdulaziz Port at Dammam and the Jubail Commercial Port. Other equipment has been increased to complement the expansion of terminals. The imports and exports of units at the three main container terminals of Jeddah, Dammam and Jubail show that Jeddah imports and export more boxes than both Dammam and Jubail ports together, about 109 per cent more than both other terminals in 1981 as shown in Table 8.4.

Fig. 1.



Table 8.4 Container Throughput (TEUs)*

Year	Jeddah	Dammam	Jubail
1980 Imports 1981	284,398	126,025	4,262
	311,843	141,806	5,592
1980 Exports 1981	278,394	124,931	14
	303,664	144,704	2,258
1980 Throughput 1981	562,792	250,956	4,276
	615,507	286,510	7,850

Source: Saudi Ports Authority. Report 4, 1981, p.14.

* TEUs : (twenty foot equivalent units)

This table reflects the fact that Jeddah port is and will remain the main commercial port for the Kingdom and explain why Jeddah Port is equipped with more facilities than the other Kingdom's ports.

Roll-on roll-off (Ro-Ro) cargo facilities exist at all main ports (Jeddah, Dammam, Jubail Commercial, Yanbu and Gizan), but Jeddah still represents the main port in the Kingdom handling all kinds of facilities, where more than 50 per cent of ro-ro cargo is containerised. Ro-ro berths have a total length of 315 m. to accommodate six stern-on vessels simultaneously; this is located at the southern end of berth 37. (see Fig.8.1) The depth of water at these berths is 8 m. The total storage and operating areas extend over 410,000 sq.m.⁽⁹⁾ In addition, the North West development in the port will have ro-ro berths.

The erection of bulk cement facilities at Jeddah port are among the important achievements in the history of the port due to the

importance of this commodity for the development of the Kingdom. The Port Authority places considerable emphasis on the provision of specialised terminals and facilities for handling cement imports, which are second only to food in importance. Two berths, 18 and 19, with 12 m of water depth and 500 m of length were available to handle the bulk cement (see Table 8.6). The capacity of the two bulk cement facilities is in excess of 17,500 tons per day. ⁽¹⁰⁾

Grain is among the important commodities received by the port accounting for 20 per cent of the total goods received during 1982. In this context Jeddah is considered as the major receiver of imported grain as can be seen from Table 8.5 (see also Table 8.8).

Table 8.5 : Grain Imports (000 tonnes)

Port	1976	1981	% increase
Jeddah	664	3,231	386
Dammam	133	1,207	808
Yanbu	-	7	-
Gizan	80	208	160
Total	877	4,653	431

Source : Port Authority, Report 4, 1981, p.20.

From the table it can be seen that in 1976 about 76 per cent of total grain came through Jeddah and about 69.4 per cent in 1981. Such a situation required adequate methods in utilizing the grain. Berth 9 was equipped with well advanced facilities for the handling, storage and delivery of grain from ship to silos. The storage capacity is in the range of 120,000 tonnes with a discharge capacity of 500 tons per hour. ⁽¹¹⁾

In addition to the above mentioned specialised berths, Jeddah Port is now one of the world's leading livestock handling ports. For example, in 1981 nearly 3.5 million live animals were imported into the Kingdom. Of these, more than 3 million were at Jeddah alone. Since October 1980 livestock has been handled by existing integrated stevedoring contractors rather than by agents' or consignees' personnel.

The port continued its progress plan and by 1982 the number of berths increased to 43 plus a ro-ro terminal with a total length of 8.5 km, where up to 50 ocean going ships can berth at any one time.⁽¹²⁾ The length, depth and the speciality of berths can be seen in Table 8.5 (see also Fig.8.1).

Table 8.6 The length and the Depth of the Port Berths 1982

Berth	Length (m)	Depth (m)	Remarks
1	180	11	General Cargo, Pilgrims and Passengers
2	200	11	" " " " "
3-6	720	11	General Cargo
7+8	380	11	" "
9	180	12	" " Bulk Grain
10+15	1080	12	" " (Berths 13-14 planned multi-purpose fruit terminal).
16	180	12	Container Terminal
17	180	12	General Cargo
18+19	500	12	Bulk Cement (silo vessels)
20+28	1620	12	General Cargo
29+30	360	12	" "
31	220	14	" "
32-34	750	14	Container Terminal (under construction)
35-37	750	14	" " " " "
38-41	720	8	General Cargo
42+43	360	11	" " (No.43 planned sugar berth)
Ro-Ro	320	8	Ro-Ro (can accommodate 5 sternramp)

Source: Ports Authority - Port information 1981.

In October 1982, two other major developments occurred in the port of Jeddah. The first was the Jeddah ship repair yard, which was equipped with the most advanced facilities for ship repairs, conversions, shipbuilding of small vessels and related engineering works. It is constructed on a 100,000 sq.m. site at the northern end of the port (see Fig.8.1). Its major facilities include two floating dry docks, seven overhead cranes, two mobile cranes, three hydraulic presses, two jetties, two 15 tonne lifting cranes and a wide range of shore facilities and plant offering a comprehensive and efficient ship repair service. ⁽¹³⁾ The second was the construction of a specialised Container Freight Station (CFS) for the handling of LCL (Less than Container Load). This is expected to provide further impetus and add stimulation to a rapidly expanding facet of container handling operations.

The mechanical and handling equipment of the port have been greatly improved since 1977. For example, in 1982 there were 592 forklifts and 197 trailers and tugs (For comparison purpose see Table 8.3).

The number of vessels calling at the port and the tonnage of imports can be used as an indicator of the development which has occurred in Jeddah Port (see Table 8.7). After 1972 the port activities increased substantially up until 1982, particularly in imports. In 1974 imports had increased by 79 per cent compared to 1972. This can be attributed mainly to the increase of oil revenue because of the increase of oil prices and oil exports. The number of vessels for the same period increased by only 15.6 per cent. This can be attributed to the increase of size rather than number of vessels, as larger vessels have been able to dock at the port. The particularly rapid increase after 1975 can be attributed to the introduction of the Second Development Plan 1975-1980 utilising the greatly expanded oil revenues. In 1980, imports of capital

Table 8.7 Number of vessels and Cargo Unloaded in Jeddah Port
1972-1982

Year	Number of vessels	Tonnage of Cargo
1972	1,065	1,065,228
1973	1,115	1,289,741
1974	1,232	1,907,689
1975	2,100	2,720,699
1976	2,317	4,635,535
1977	3,203	8,158,055
1978	3,869	9,654,693
1979	4,042	11,785,728
1980	4,367	13,503,724
1981	4,517	14,822,877

Source: Port Authority, Jeddah Islamic Port, Unpublished Report.

and consumer goods and raw materials were 607.9 per cent of those of 1974. With the introduction of the Third Development Plan 1980-1985, port activities increased yet again after 1980 as shown in Tables 8.7, 8.8. The total quantity of goods imported in the first half of the year 1982 was nearly the same as the imports' total for the whole of 1977. Within ten years imports through Jeddah port increased by 1554.6 per cent.

Imports can be grouped into six main groups with proportional values as follows: 34 per cent foodstuffs, 25 per cent cement, 22 per cent construction materials, 4 per cent vehicles, 1 per cent equipment and 14 per cent of others in 1981.

The number of vessels arriving through Jeddah port similarly increased after 1975, rising by 97 per cent in 1975, 279.5 per cent in 1979 and 491 per cent in 1982 of the number of vessels in 1972.

In the light of the above figures, it is clear that the traffic through Jeddah port has developed greatly since the early 1970's. This was made possible by the great developments in port capacity.

As shown in Table 8.8 containing the latest comparative data available from the National Ports Authority, Jeddah port occupies the first place in the ranking order of the six Saudi Arabian major ports for all but two types of traffic, i.e. the import of steel and the export of petrochemicals. As noted earlier, Saudi Arabia with a population of less than 10 million is the eleventh largest world importing country (by value). Jeddah is, above all, the entry point for almost 52 per cent of this flood of imports. It is also significant as an indicator of the nature of the industrial status of Jeddah, relative to the new industrial cities of Yanbu and Jubail, that the latter has already become the leading national exporting port. Jubail, and shortly Yanbu, will increasingly dominate export trade which will be almost exclusively in petrochemicals.

Table 8.8 Cargo Handled by Main Seaports 1403 A.H.(1982-Sept 1983)

	<u>000 freight tons</u>	
<u>Total Imports</u>	6 ports	69,650
	Jeddah	36,209
	Dammam	22,651
<u>Foodstuffs & Feed</u>	<u>Total</u>	11,109
	Jeddah	7,634
	Dammam	2,546
<u>Sheep & Goats (Head)</u>	<u>Total</u>	4,553
	Jeddah	3,687
	Dammam	817
<u>Building Materials</u>	<u>Total</u>	30,872
	Jeddah	12,819
	Dammam	11,171
	Yanbu	2,197
of which cement	<u>Total</u>	14,127
	Jeddah	5,246
	Dammam	4,625
	Yanbu	2,105
of which steel		6,210
	Dammam	2,864
	Jeddah	1,693
<u>Motor vehicles</u>	<u>Total</u>	8,147
	Jeddah	4,364
	Dammam	2,968
<u>General Cargo</u>	<u>Total</u>	13,363
	Jeddah	10,107
	Dammam	5,080
<u>Total Exports</u>	6 ports	3,771
	Jubail	1,963
	Jeddah	928
	Dammam	711
<u>General Cargo</u>	<u>Total</u>	1,503
	Jeddah	927
	Dammam	434
<u>Petrochemicals</u>	<u>Total</u>	2,240
	Jubail	1,962

Source : Saudi National Ports Authority

Passenger Traffic

Jeddah Port continues to be the main entry point for pilgrims en route to the holy places of Islam who constitute the major proportion of all seaborne visitors to the Kingdom. Facilities for passenger traffic are still being improved with the construction of a new terminal in the North West Development area of the port and the commissioning of newly designed passenger gangways. The total number of passengers arriving and departing through the port has increased greatly. The total number of passengers during 1980 was 186,954 increasing to 209,463 in 1981, an increase of 12 per cent over 1980. In 1982 the number of passengers increased to 275,773, an increase of 47 per cent over 1980. ⁽¹⁴⁾ As discussed earlier in Chapter 6 there has been a substantial decrease in the proportion of pilgrims using sea transport (see Table 6.15) but it is clear now that a great number of non pilgrim arrivals are using the port as entry because of the cheap fares compared with air transport, particularly for traffic within Red Sea ports.

The port of Jeddah in 1982 had 1,464 registered as port employees, of whom 301 are on monthly salary and the rest permanent employees. Saudi employees represent 73 per cent of the total. In addition, Jeddah port has several sub-contracted companies of specialized fields such as cleaning and mechanical and handling work. The total workforce in these companies was 6,414 in 1982. ⁽¹⁵⁾ This system of employing different companies has proved to be of great importance for the port as well as the users of the port.

Finally, Jeddah port can be considered to be the largest port in the Red Sea and Gulf area. Compared with other Red Sea ports it is not only ahead in terms of absolute cargo throughput, but also for annual berth productivity. In the Gulf it is the first in absolute cargo

Table 8.9 **Jeddah Port Compared with other Red Sea and Gulf Ports**

Red Sea Port	Year	Throughput (000 dwt)	No. of Berths	Annual productiv- ity per berth (000 dwt)
Jeddah	1977	8,200	21	390
Aqaba	1976	7,040	4	
Port Sudan	1977	3,000	17	176
Aden	1977	690	14	49
Yanbu	1977	773	2	387
Gizan	1977	654	2	327
Hodeidah	1974	601	3	200
Dijbouti	1974	450	7	64
Massawa	1974	336	6	56
Gulf Ports				
Dammam	1977	6,400	22	291
Bandar-Shapur	1977	5,616	12	468
Basrah	1977	4,455	18	190
Kuwait	1977	4,000	18	247
Dubai	1977	3,995	19	210
Khorramshar	1977	3,780	13.5	280
Bandar Abbas	1977	3,074	8	384
Doha	1977	1,217	9	135
Abu Dhabi	1977	1,545	12	129
Sharjah	1977	1,700	7.5	227

Source: Port Authority Report 1, 1978 pp.19-20.

throughput and the second in the annual productivity per berth as shown in Table 8.9.

Jeddah has also benefited from one element in the national policy of encouraging the growth of the Saudi shipping industry. Up to February 1983, all vessels registered as being at least 51 per cent owned by Saudi nationals or companies were able to purchase bunker fuel oil from Saudi oil refineries (at Jeddah and Dammam) at prices subsidised up to 90 per cent of world market rates. The new controls which then came into effect selectively raised prices but in ways which have particularly favoured Jeddah port. Red Sea trading vessels can still obtain bunker oil at 30 per cent of market prices and those carrying imported food and consumer goods (commodities especially important to Jeddah see Table 8.8) could do so at rates rising from 30 per cent to 60 per cent by June 1984.⁽¹⁶⁾

2 Roads

The early years of the Kingdom witnessed slow development of the road system but since the establishment in 1935 of the Works and Minerals Authority of the Ministry of Finance it has progressed.⁽¹⁷⁾

Saudi Arabia extends over a vast area (2,253,300 km) and great distances and expanses of wasteland separate its urban settlements. In these circumstances, the government with at first limited resources had to give priority to the most vital areas. Jeddah as being the main entry for the holy places of Islam, Makkah and al-Medina, was the first in the Kingdom to receive such attention.

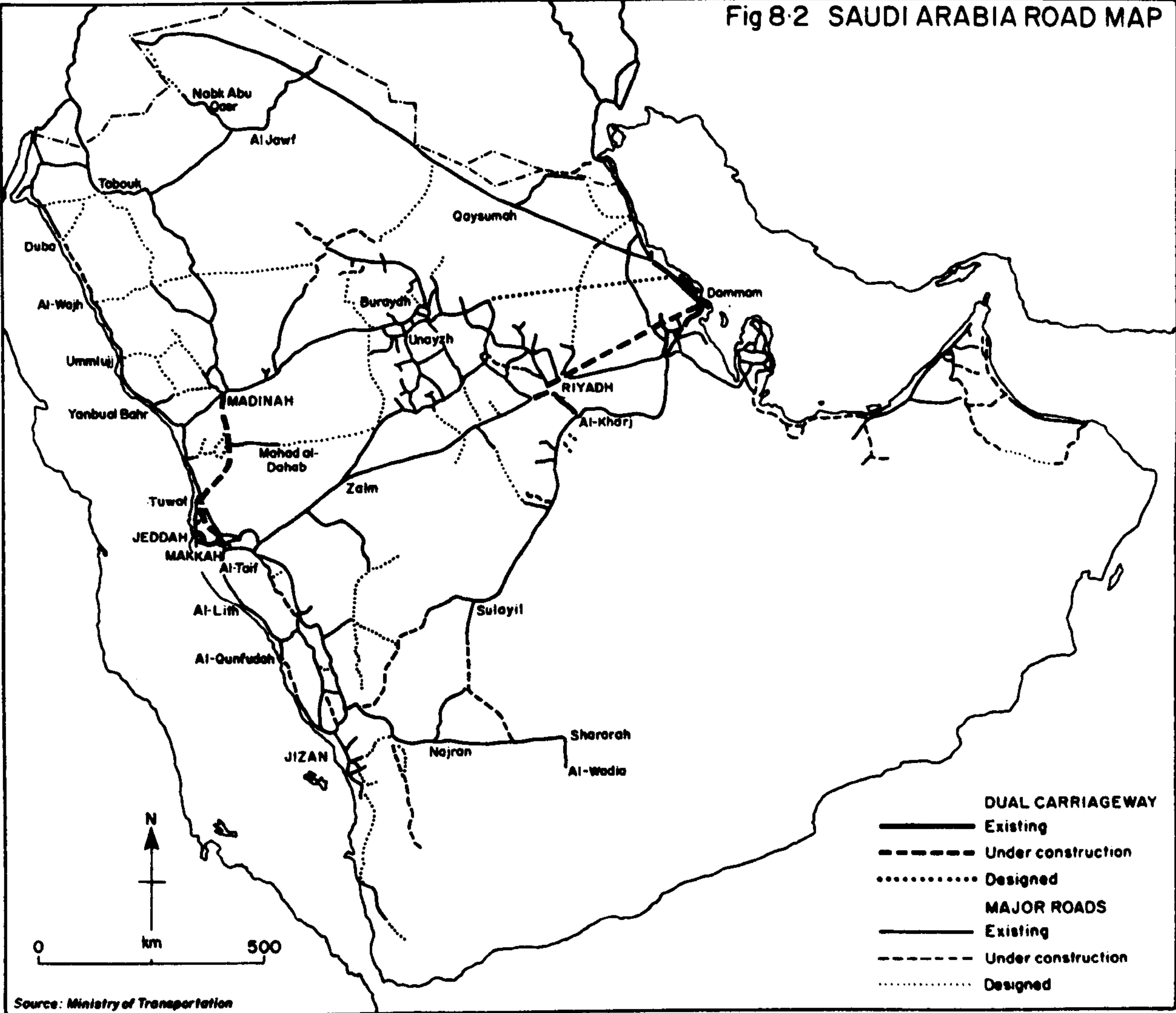
The first hard-top road to be built in the Kingdom in 1938 linked Jeddah to Makkah; 73 kms long it was built by Egypt with money from the waqf of the Holy Mosques. The financing of this road by another country reflected the poverty of the Kingdom at that time. Hijaz as a whole benefited from three factors.⁽¹⁸⁾ First, it

contained the two holy cities of Makkah and al-Medina which are visited annually by a large number of pilgrims, mainly passing through Jeddah especially since the Hijaz railway was destroyed in the First World War. Pilgrim traffic required good communications between Jeddah and the other two holy cities. Secondly, as a result of the Hajj the three main cities of Hijaz achieve a relatively high level of secular economic and social activity which demanded and could pay for road improvements. Thirdly, the poor national financial situation did not allow any significant development in other parts of the Kingdom, and slowed progress even in Hijaz. Thus not until 1952 did the government start the construction of the Jeddah-Medina road. The first section 100 kms from Jeddah was finished in 1953 and the whole road was completed in 1955. (19)

Such were the early stages of development of road transport, but since 1965 road building has taken place throughout the Kingdom, accelerating notably after 1973. In 1970 Saudi Arabia had 7,507 kms of modern roads increased to 10,938 kms in 1974, an increase of 45.7 per cent. (20) During 1980-81, a total of 916 kms of asphalted roads were built of which 671 kms were main road, 42 kms secondary roads and 205 feeder roads. This brings the total length of asphalted roads to about 22,501 kms by the end of 1980. (21) In 1982, the total length of asphalted roads again increased to over 25,000 kms. (22) (Fig.8.2).

As the number of pilgrims increased substantially, particularly since the early 1970's (see Chapter 6. Table 6.15) there was also a remarkable increase in the population (see Chapter 2) and an explosive increase in the number of vehicles (see below). The Jeddah-Makkah and Jeddah-al-Medina roads under these circumstances became inadequate, particularly during the Hajj and Umra seasons. According to the 1971 traffic survey data carried out by RMJMP, the road from Jeddah to Makkah

Fig 8-2 SAUDI ARABIA ROAD MAP



Source: Ministry of Transportation

was used to about 20 per cent of its practical capacity at normal times of the year and during the Hajj this utilization rose to 89 per cent. The normal traffic on the road to Medina represented 16 per cent of its practical capacity but rose during the Hajj of 1972 to 91 per cent of its capacity.

Accordingly, something had to be done in order to increase the capacity of the two main roads since the financial capacity of the Kingdom, particularly after 1973, was sufficient to carry any large projects. With the introduction of the Second Development Plan (1975-80) a new era of road construction began centred on a motorway system which will connect all major cities in the Kingdom. The purpose of such arterial motorways is fairly obvious : they should provide safer travelling, reduce the time taken to make the journey and carry more traffic. (23)

The first main motorway to be completed was between Jeddah and Makkah and is a very modern system with dual carriageways each with 4 lanes. Its construction has shortened travelling time considerably and has had the reported effect of a reduction in serious accidents (although statistical proof is not available), This, of course, is in addition to the greater convenience to the population. Unlike the original road, the new motorway does not pass through any settlements, and for this reason some pilgrims as well as local residents continue to use the old road in preference to the new. Once the bridge between the port and point 12.5 km on the motorway is completed pilgrims will be able to travel from the port directly to Makkah. Heavy goods vehicles will continue to use the old road leaving the motorway solely for commuter traffic.

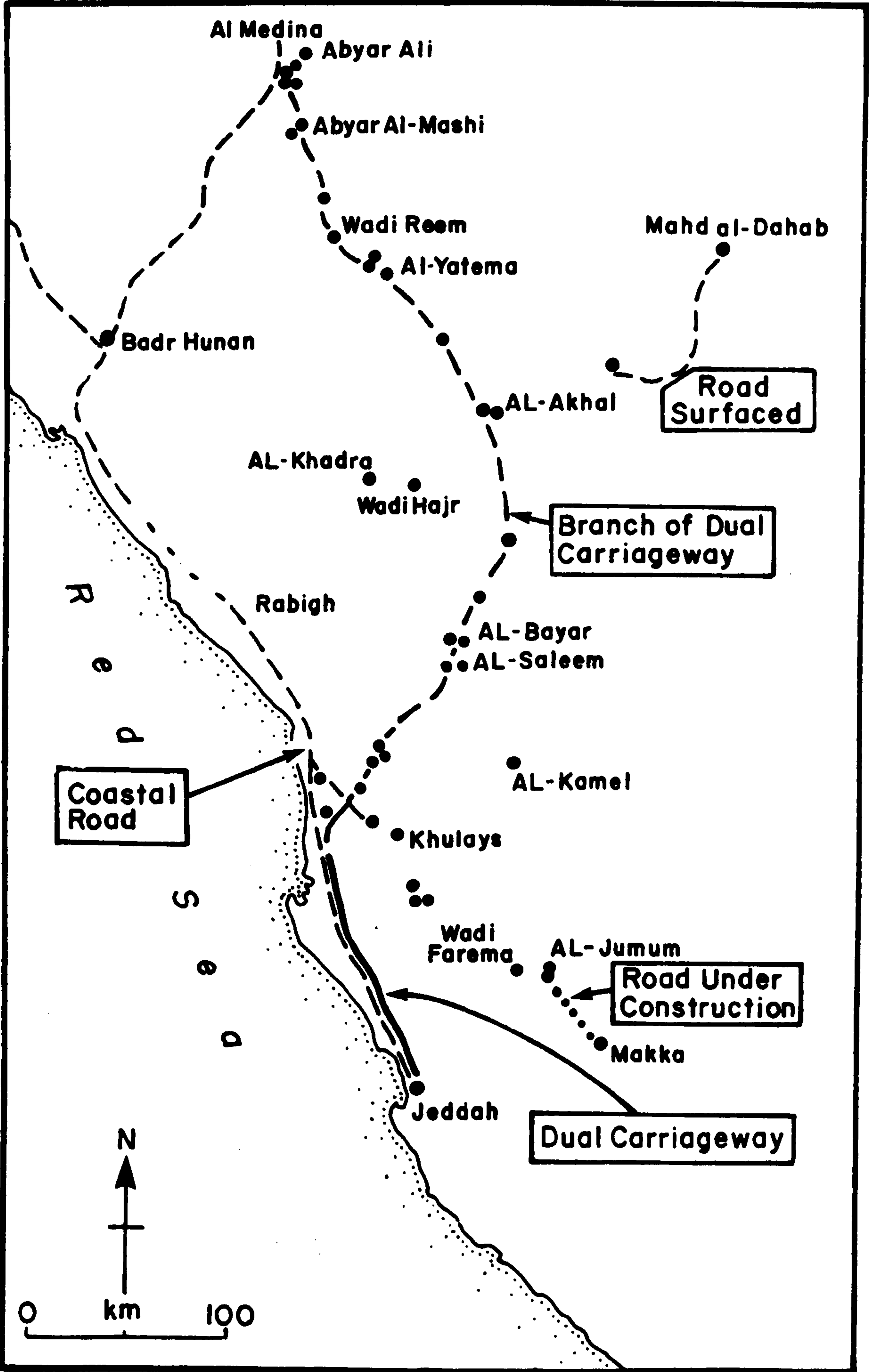
The second motorway connects Jeddah with Medina and consists of 3 lanes in each of two carriageways, the width of each being 11.35 m,

divided by central islands of 20 metres. This motorway has no less than 29 branch connections. ⁽²⁴⁾ At al-Qadimah the old road continues directly to Jeddah, the other, new, section leads to Makkah through Khulais, Assfan and al-Jamum (Fig.8.3). This new motorway section had to be built as the old was unsuitable for improvement owing to terrain difficulties. The old road effectively becomes the coast road serving small villages and will carry pilgrims who wish to visit Baden village (one of the centres of historic interest). The new motorway will serve several villages with a total population of about 200,000 people as well as the gold mines of Al-Mahed district. Full completion of this motorway is anticipated in the near future. It is worth noting that through these two main roads the other parts of the country, as well as the neighbouring countries, are connected to Jeddah. The Central, Eastern Southern provinces and Gulf States are connected by the Makkah motorway, the Northern province and the neighbouring countries in the north connected through the al-Medina motorway (Fig. 8.2).

The introduction of the motorways system between Jeddah and Makkah has greatly increased the traffic of vehicles and passengers, particularly during Hajj season; data is only available for the number of vehicles entering and leaving Makkah through Jeddah during the Hajj. For example in the 1979 season, one year before the opening of the motorway, the number of vehicles entering Makkah through Jeddah was 355,310; this increased by 58 per cent to 562,100 in 1980. ⁽²⁵⁾ A similar increase in the number of vehicles and passengers travelling between Jeddah and al-Medina can be expected when the motorway is completed in the near future.

The considerable and multi-sectoral development which has taken place in the Kingdom since the early 1970s has led to a great increase in

Fig 8.3 PROJECT OF MEDINA DUAL CARRIAGEWAY AND ITS BRANCHES



After: Ministry of Communication

the quantities of goods transported by road throughout the country. For internal distribution, road transport is cheaper than air transport but data concerning goods transported on roads is not available. Jeddah has gained greatly from its location on the Red Sea because, compared with Dammam on the Gulf, the transport cost distance for imports, the majority of which are shipped from U.S.A, Europe and Africa, is lower.

3. Airways

In a country such as Saudi Arabia in which large expanses of relatively "negative" territory separate the urban settlements, given the paucity of economic resources relative to infrastructural need up to the mid 1960's, airways provided a relatively cheap way of providing some low volume arterial communication. In 1945 Saudi Airlines commenced operations with 3 DC3 aircraft, carrying passengers and mail between the three main cities, Jeddah, Riyadh and Dhahran. As a result of expanding demand, five DC4's and five Bristol freighters were soon added to the fleet and in 1952, ten Convair 340's were purchased in order to extend the domestic route network and increase the intensity of schedules. In 1960 three DC6 were purchased to start scheduled international services to other Arab countries and especially concerned with the pilgrim traffic.

In 1963, Saudi Arabian Airlines, which had developed as the only carrier permitted in the Kingdom, was reorganised as a Corporation in 1963, allowing it to operate as a commercial entity, Saudia, with its own Board of Directors. ⁽²⁶⁾ At that time it was natural that Jeddah should be chosen as the official and operational headquarters for Saudia since it was the busiest national and international airport. A new era of development began with the acquisition of two new Boeing 720 B's, when Saudia became the first airline in the Middle East to fly the biggest jet aircraft and to extend its international network beyond the Arab countries. Saudia began flights to Tripoli, Tunis and

Casablanca in North Africa and in so doing established the first direct link between the Arab East and the Arab West through Jeddah (Fig. 8.4 also shows other passenger and cargo routes linking Jeddah to other parts of the world). The first non-stop flight to connect the Kingdom with Europe via London was in 1968 through Jeddah. The Saudia flight route net and the number of passengers and the volume of cargo carried has continued to increase ever since, and the fleet of aircraft, together with all the associated maintenance and servicing facilities has steadily grown. By 1981 Saudia had a total of 62 crafts of different sizes; 3 B747, 7 B707, 19 B737, 2 A300-600, 16 Tristar L-1011, 4 DC-8, 2 Fokker-28 and 9 different types for special flight services. Of these craft, 50 were owned by Saudi Arabia and 12 leased from different sources. (27)

Saudi airports have developed side by side with the airways, and Jeddah in this context has always received priority attention, particularly for pilgrim traffic. The old International Airport which was located 3 km north-east of the CBD for years was the busiest not only in the Kingdom but in the Middle East, handling up to 260 flights a day on average, and up to 650 a day during the last pilgrimage (1980). (28) By early 1981 the old airport was abandoned and traffic transferred to King Abdulaziz International Airport (KAIA) (Fig.8.5). The old airport was not able to cope with the increasing number of both passengers and aeroplaces and the location of the airport itself became unsuitable as a result of urban growth. A new airport had to be built in an area less affected by problems of noise pollution and large enough for all modern needs. By 1981 the first phase of KAIA was completed covering an area of 105 sq. kms located 25 km north of Jeddah on the coastal plain that lies between the Hijaz mountains and the Red Sea. The new airport consists of two main terminals, the South terminal for Saudia use only and the North Terminal, to be used by more than 40 other airlines (Fig. 8.5), which is similar in design to that allocated

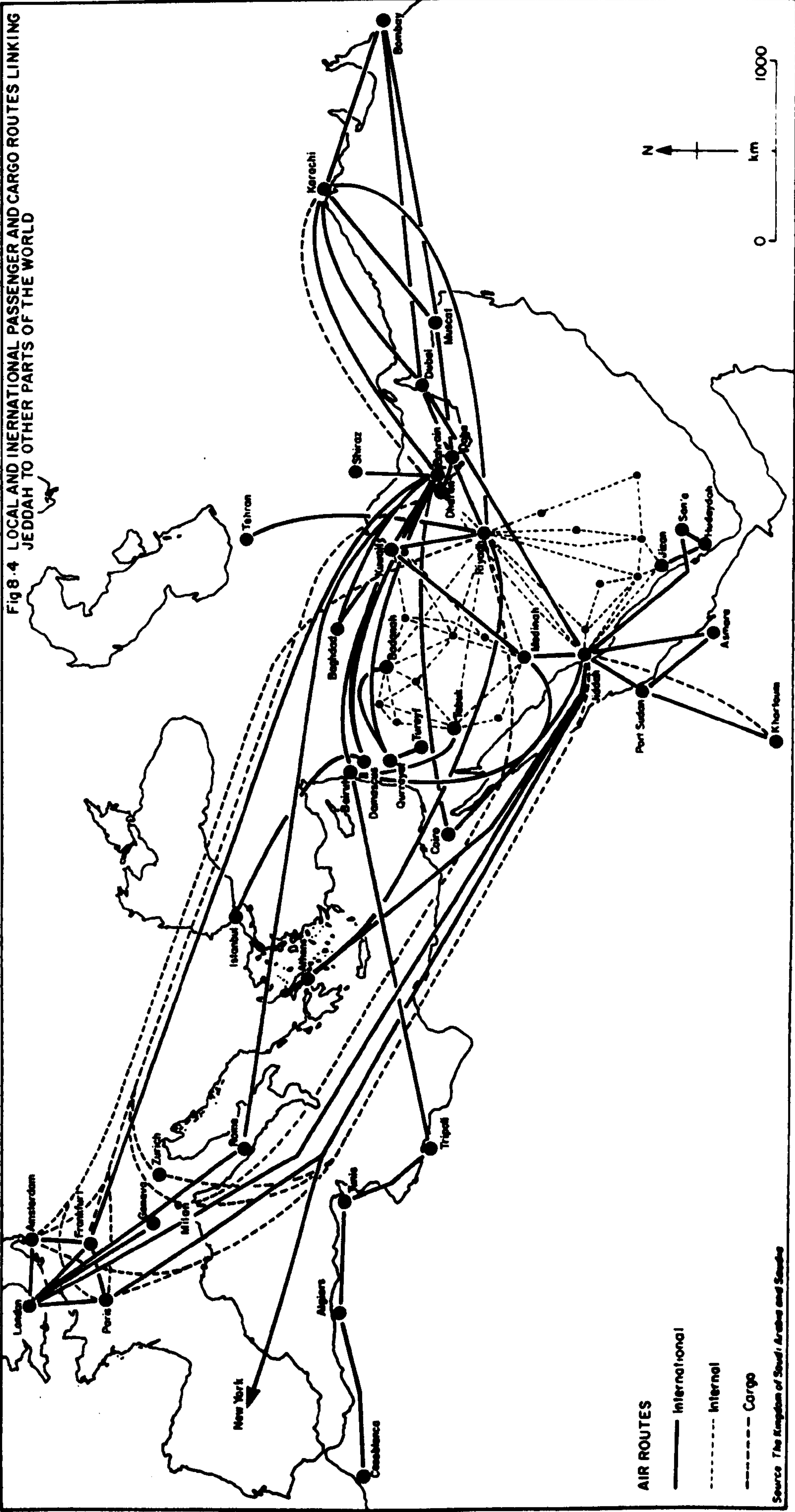
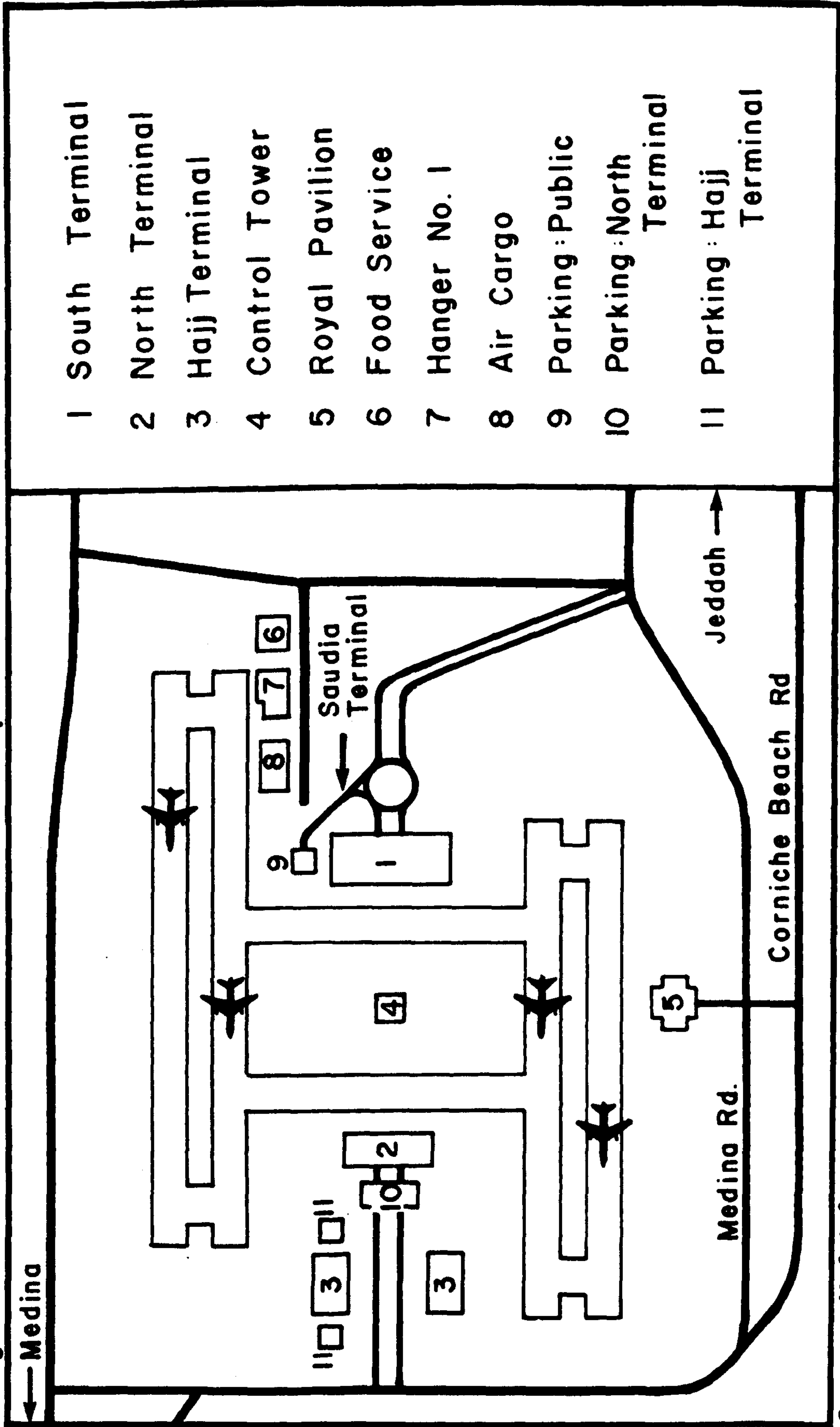


Fig 8-5

King Abdul Aziz International Airport



Source: K.A.I.A.

to Saudia but slightly smaller. There is also a Hajj Terminal, and a Royal Pavilion. Mobile lounges are used to convey passengers from the 20 terminal gates to the waiting aircraft which park at one of the 44 bays alongside the mall between Saudia's South Terminal and the North Terminal. (29) The Hajj Terminal design is based on the tents of the desert, each 45 sq.m. at the base, rising conically to a height of 50 m. There are 210 tents of Teflon coated fibreglass covering an area of 430,000 sq.m. Among the facilities at the terminal are prayer and rest areas, telephone and post offices, restaurants, shops, diplomatic services, information centre and first aid facilities, together with the guidance centre operated by the Ministry of Hajj Affairs.

The new airport is itself independent of the city's water, electricity and sanitary sewage services. The airport produces its own drinking water by means of a desalination plant on the Red Sea capable of generating up to 10 million gallons of potable water per day. In addition, electricity is produced by generators built for the airport use and a sanitary sewage system carries domestic and industrial waste water from airport facilities to a central water treatment plant where it is processed and re-used for irrigation. (30)

Air Traffic

As noted in Table 8.10 two periods of air traffic development can be distinguished, the first from 1969-1975 where air traffic increased particularly rapidly, the number of flight arrivals more than doubling. The increase in foreign air-line activity was especially strong. Freight traffic prospered but the growth in passenger arrivals was even more marked although in part concealed by the seasonality of Hajj traffic (see Table 6.15). The 1970-75 Plan's development programme resulted in a very large growth in immigrant workers, mostly arriving by air. The second period, 1976-1981 witnessed a substantial increase

Table 8.10 Air Traffic of Saudia And Foreign Airlines In Jeddah Airport During 1969-1981

Year	Saudi Airlines						Foreign Airlines					
	Arrival			Departure			Arrivals			Departure		
	No.of Flights	No.of Passen- gers	Freight & Mail Ton	No.of Passen- gers	Freight & Mail Ton	No.of Flights	No.of Passen- gers	Freight & Mail Ton	No. of Passen- gers	Freight & Mail Ton	No. of Passen- gers	Freight & Mail Ton
1969	5,985	144,503	1,635.5	153,604	1,965.9	3,752	152,438	3,873.9	149,452	583.2	149,452	583.2
1970	4,219	149,990	1,478	146,197	1,622.3	4,119	174,479	3,691.3	171,220	676.7	171,220	676.7
1971	4,460	169,041	1,808	155,675	1,988	5,094	251,224	3,815	235,167	679	235,167	679
1972	8,252	282,235	2,713	265,420	2,257	-	473,266	5,513	320,460	798	320,460	798
1973	10,994	308,543	4,712	303,840	2,394	7,131	572,683	4,605	393,721	671	393,721	671
1974	11,936	375,100	4,602	397,153	3,195	7,666	598,501	5,824	542,667	1,806	542,667	1,806
1975	12,292	458,250	5,772	482,112	4,013	8,857	693,634	6,226	928,295	2,571	928,295	2,571
1976	16,403	918,744	7,530	884,095	6,329	9,349	783,110	6,463	790,386	1,307	790,386	1,307
1977	10,795	1,376,394	9,618	919,170	4,019	11,159	1,121,526	17,043	1,006,972	3,603	1,006,972	3,603
1978	10,222	1,035,585	10,571	1,183,830	10,078	12,963	1,286,713	14,530	1,229,055	2,894	1,229,055	2,894
1979	20,264	1,543,194	15,014	1,655,698	9,905	12,684	1,308,210	17,577	1,199,850	4,584	1,199,850	4,584
1980	29,913	2,579,480	17,218	2,488,773	16,014	12,791	1,105,381	23,662	1,471,675	1,337	1,471,675	1,337
1981	32,767	2,417,122	27,003	2,302,694	19,473	12,040	1,362,547	22,055	1,060,963	7,002	1,060,963	7,002

Source : Ministry of Finance Statistical Yearbook, 1965, 1979, 1981.

in the number of passengers and a smaller increase in the number of flights, this being attributable to the use of larger aircraft. Here again, the introduction of the Second Development Plan (1975-1980) had a great effect on the airtraffic as shown in Table 8.10. In this context seasonal fluctuations play an important role in air-traffic size. Air traffic increases greatly during a short period of two months namely Dul-Qe'da and Dul-Hijja. From the statistical point of view the number of passengers carried by both Saudi and Foreign airlines during these two month periods are almost double the number in any two other months. For example in 1979 30 per cent of the total passengers carried by Saudia and 47.7 per cent by other foreign airlines arrived in the two month Hajj period. This seasonality is expected to continue into the future when the number of air arrivals by pilgrims is forecast to rise to 2.3 million by the turn of the century. (31)

Concerning internal air transport, Jeddah airport was the most important up to 1978 according to the number of passengers travelling within domestic airports, but in 1979 Jeddah became second to Riyadh. Generally, internal air transport in Saudi Arabia has increased greatly due to the rising standards of living in the Kingdom. Fig.8.4. In 1973 the number of passengers transported by Saudi airlines inside the Kingdom totalled 565,220, increasing to 1,978,041 in 1976 and 6,642,606 in 1981. (32) It is worth noting that internal air transport at all Saudi airports increased greatly and that the Jeddah-Riyadh and Jeddah-Medinah routes are the most important. This can be attributed to the importance of Riyadh as the capital and al-Medina as a religious centre.

In the light of the above fact, air transport services in Jeddah, as well as in the Kingdom, were developed greatly to meet the increasing needs. This would not have occurred without the improvement in airport construction and the increase of Saudia's capacity. The opening of KAIA

enables Jeddah to offer adequate and better services for both internal and international passengers. The opening in 1984 of the new King Khalied International airport at Riyadh is unlikely to significantly diminish activity at KAIA in Jeddah, since all the projections of air-traffic in the Kingdom suggest ample room for both.

Transportation Within the City

The aim in this section is to turn from Jeddah's external transport linkages to examine the factors that influence traffic volume and movements within the city as well as their effect on transportation land use and the road network.

Means of Transportation

Several types of transportation are presently found in Jeddah; private cars, motorcycles, taxis, public buses and commercial vehicles.

(a) Private cars : Due to the increase in the standard of living, low import customs duty (3 per cent ad valorem) and cheap fuel*, the number of private cars has increased greatly; for example from 105,455 in 1978 ⁽³³⁾ to 348,552 in 1981. ⁽³⁴⁾ It is common now in Jeddah as well as in other large cities for a family to own more than one car. Moreover, some of the low income foreign labourers, mainly for whom public transport is supplied also own their own cars. Whilst in 1983 Japan replaced the USA as the major supplier of cars (by number), American and German cars still remain high status symbols in the eyes of the wealthier Saudis.

(b) The number of motor cycles has risen in recent years to a total in 1981 of 17,340. ⁽³⁵⁾ This can be attributed to the expansion of the

* A litre of ordinary petrol in the city in 1981 was SR 0.21.5 (1 Riyal = £0.18).

city's built-up area, the growing numbers of foreigners and young people who require cheap and fast means of transportation, and the absence of natural obstacles, i.e. hilly areas. In addition motorcycles are easy to park in congested areas and there is no severe climatic conditions which could prevent their use.

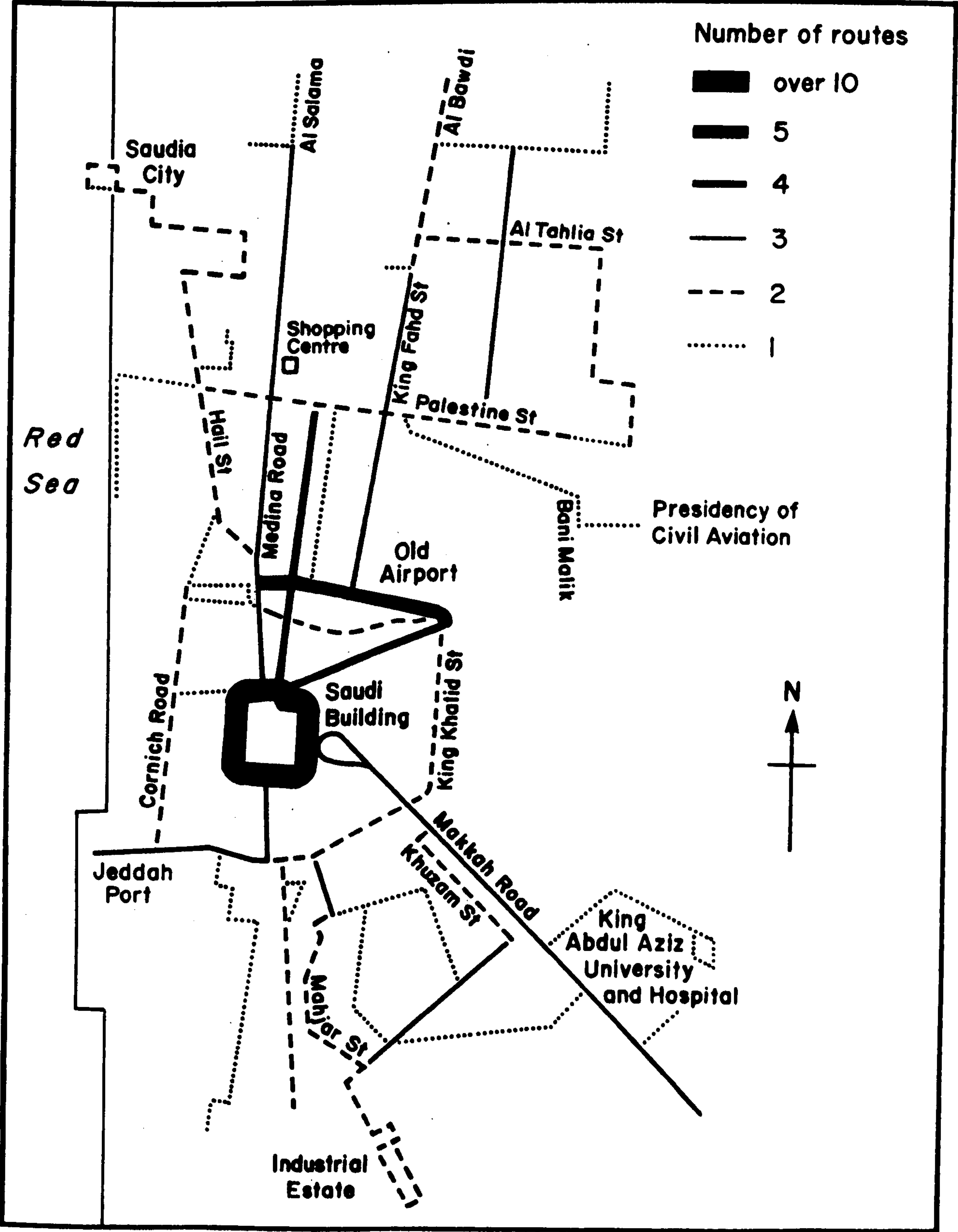
(c) Taxis : The number of taxis is relatively small when it is compared with other means of transportation. Data concerning the total number of taxis is not available even though a licensing system was in operation for some years. However it was estimated that in 1982 there were only 4,000. ⁽³⁶⁾ The low number results partly from the growth in private ownership of cars but also to the decision in 1979 to issue no fresh taxi licences because of the growing number of accidents caused by taxi drivers. In the same year new regulations were issued in order to reduce the number of accidents and raise the standard of driving. The minimum age for licensed taxi drivers was raised to 35 and they were required to be full time drivers and Saudi citizens. The municipality has attempted to establish fixed tariffs and to have meters installed but without success. As a result fares are high, starting at about SR 10, and variable. Taxis are chiefly hired by resident and local women, since women are not allowed to drive and by visitors.

(d) Public buses : Up until 1980 Jeddah was served by relatively few mini buses, numbering 283 in 1975 and licensed to run on sixteen routes within Jeddah. ⁽³⁷⁾ All these bus services were irregular and totally inadequate to cope with the needs of the urban population. The congestion on buses was acute and most vehicle, especially during the rush hours carried passengers far above their normal capacity. There were no effective and reliable timetables for the operating buses and no fixed bus stops, so passengers used to join and leave the buses at

various points along the route, thus making public transport travelling unpleasant. This was due to the fact that public transport was monopolised by individual owners who did not accept any regulation. In such circumstances something had to be done and a regular public transport system needed to be established, not in Jeddah alone, but throughout the Kingdom. In 1977 the Saudi Public Transport Company (SAPTCO) carrying a government subsidy was created and in 1980 local service operation in Jeddah began with four bus routes served by only 22 buses. 1981 witnessed a great improvement in the company's services, particularly in the number of buses available. For example, bus routes were increased to 13 and buses increased to 282, a growth of 1181 per cent in one year. ⁽³⁸⁾ By 1982 the picture changed and although bus routes increased to 21, the number of buses available decreased to 270. ⁽³⁹⁾ This can be attributed to a new policy followed by the company to reduce the number of drivers due to the company's financial difficulties. Jeddah thus joined the ranks of the many other large cities where the conflict between the concepts of relative economic viability and public service is still not resolved.

At present (1982) bus lines cover most parts of the city as shown in Figure 8.6. About 47.6 per cent of the total bus routes in Jeddah serve the northern part of the city linking it with the CBD and from there to other parts of the city. They are of particular importance because they provide transport not only for the large resident population of the northern zones but also for travel to and from these zones from other parts of the city. This is because the northern part of the city houses centrally and regionally important service activities such as those supplied by foreign embassies, most regional government headquarters, the Ministry of Foreign Affairs, Central Municipality offices, the main vegetable market and other main shopping centres. There is an intense pressure on buses between the morning hours

Fig 8.6 BUS LINES AND DAILY MOVEMENT OF PUBLIC BUSES, 1982



7-9 a.m (the travel to work period), and during the evening hours of 5-9 p.m. as people go shopping and return to their homes.

The southern part of the city is provided with about 23.8 per cent of the total bus routes, linking it with the CBD and to some parts of Eastern Jeddah. For the first time in the history of Jeddah a large part of southern Jeddah is now served by public transport. The services extend as far as Petromin and the Quarantine hospital and surrounding areas. These bus services provide transport facilities for employees on the two industrial estates, as well as generally to the inhabitants of the southern residential areas.

The five eastern bus routes (23.8 per cent of the total) provide essential services both for the local residential areas and other activities located in these zones. Bus services provide transport facilities for both students and employees of King Abdulaziz University together with its women's branch. The buses also serve some of the regional headquarters of the Ministry of Industry and Electricity, Ministry of Commerce Laboratory and Ministry of Public Works and Housing.

As shown in Figure 8.6 , there is a great concentration of bus routes in the CBD. This can be attributed to the fact that most bus routes in the city have their final destinations in the central part of the city and in doing so illustrate the strength of the central place status of the area. As mentioned earlier in Chapter 4 whilst each part of the CBD tends to offer slightly different types of services, it is the CBD as a whole which is the transport node, within which there is a very high density of mainly pedestrian circulation.

In addition, there are also two circular bus services linking the fringes of the northern, eastern and southern areas to each other and to Jeddah's port so this is of great importance for both port employees

and people who otherwise utilise port facilities. The buses also connect the Hajj seaport and Hajj airport centres.

Public transport in Jeddah continues to face several problems. First, and this affects all Saudi Arabia, the public transport company has to provide transport services according to Islamic law, which requires the separation of women from men. To apply this rule, the bus has to be divided into two sections with the back section designated for women's use. Since it is very difficult to assign female conductors to all coaches, a voluntary collection box for fares is provided. It is estimated that about 95 per cent of women do not pay their fare, representing a great loss for the company. In addition, on some routes the women's section remains empty while the men's section is over loaded. As elsewhere in the Kingdom there is a shortage of buses and drivers. Jeddah is further specially affected by the seasonal switch of buses and drivers to Makkah to meet the high peak demand during the Hajj.

About 160,000 of the population of Jeddah make bus journeys per day either to the CBD or to the outer zones of the city. ⁽⁴⁰⁾ In this context Jeddah's passenger bus movement is the largest in the Kingdom, Riyadh coming second with 105,000 passengers carried per day, Makkah with 62,000, Dammam 30,000 and Medeina 17,000. In addition Jeddah in 1981 had more buses and employees than any other city in the Kingdom, even though the number of routes was relatively small as shown in Table 8.11.

The timetable of bus services depends mainly upon the direction of the bus, time of the day, and the distance covered. For example, the short distance circular bus service runs every six minutes in the morning and evening hours and every 10-15 minutes during mid-day and late

evening. The long distance bus services run on average every 12 minutes during morning and evening hours and every 18 minutes during mid day and late evening.

Table 8.11 Bus Services in Jeddah Compared With Other Cities in the Kingdom 1981

City	No. of buses	No. of routes	No. of employees
Jeddah	282	13	1,197
Riyadh	218	12	932
Makkah	167	17	767
Dammam	101	14	441
Medina	68	6	219

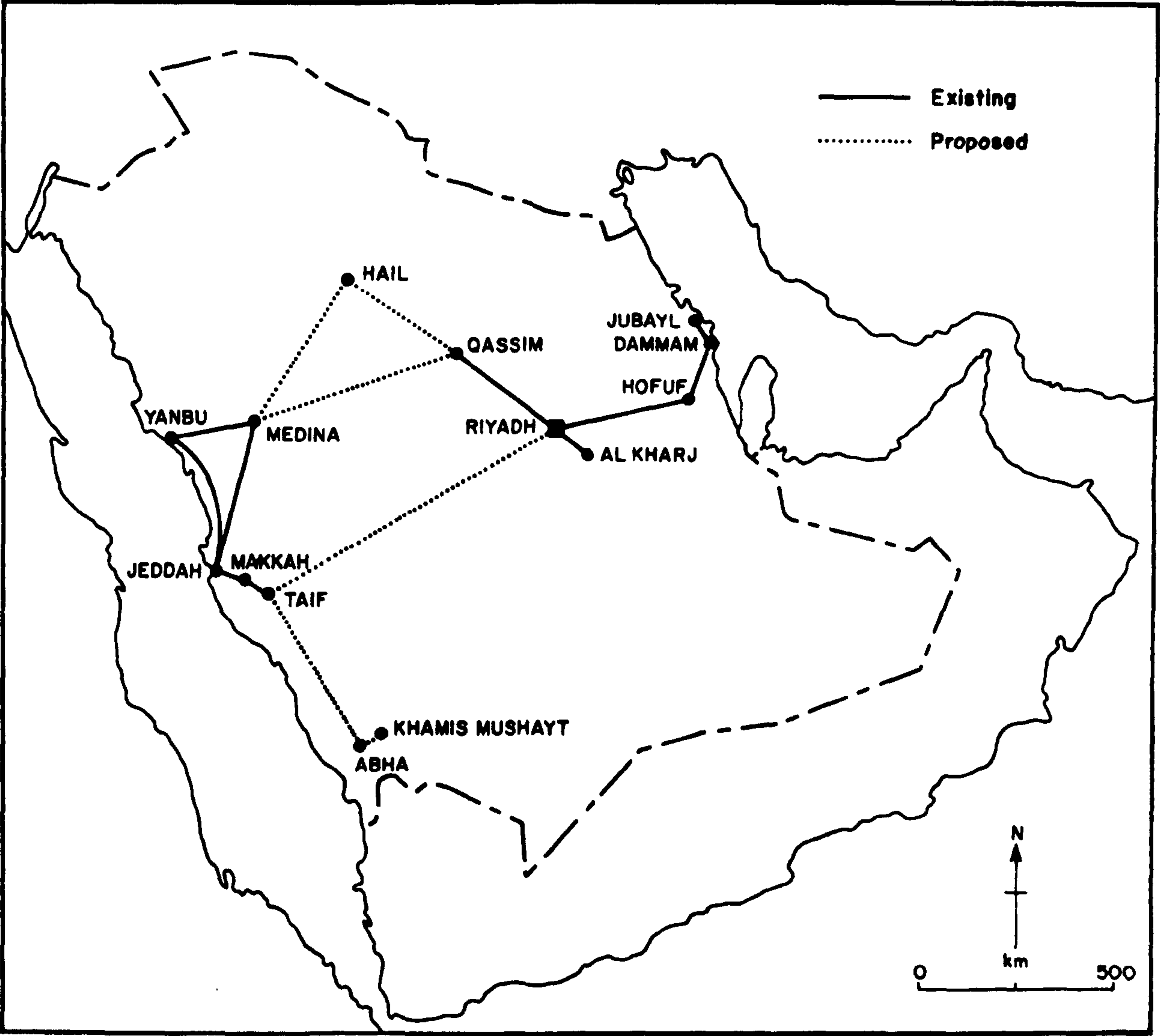
Source : Saudi Public Transport Co. Facts about SAPTCO 1981.

Inter-city bus services play an important role in connecting the city of Jeddah to the main cities of the Western region. The 73 km Jeddah-Makkah route is the most vital, not only in the Western Region but in the whole of the Kingdom. According to the Jamieson Mackay and Partners Survey of 1976 the peak demand for public transport services between Jeddah and Makkah was estimated at 140,000 passengers per day in 1981 and 168,000 passengers per day in 1991. ⁽⁴¹⁾ The Jeddah-al-Medina route is normally in second place of importance but the Jeddah-al Taif bus route has its own seasonal peak in traffic associated with vacation activity in al-Taif during summer when al-Taif also becomes the operational capital of the Kingdom.

As shown in Figure 8.7 Jeddah in the near future will be connected to Riyadh (Central Province) and to Abha (Southern Province) through al Taif.

(e) Commercial vehicles: The number of both light and heavy vehicles

Fig 8-7 INTER-CITY BUS SERVICES — EXISTING AND PROPOSED



Source: SAPTCO

has risen in recent years due to the increase in commercial and industrial activities and of course to the distribution from Jeddah of the flood of national imports. In 1981 Jeddah had about 234,059 transport vehicles,⁽⁴²⁾ providing transport services both for the city and its surrounding areas. Heavy vehicles provide an essential service, particularly for the port and industrial estate and transport all different kinds of goods from the port to the warehouses and industrial estates within the city and to other parts of the country. Some of these vehicles serve only Petromin Industrial Estate factories in transferring their commodities in the city and to other cities in the Western Region (see Chapter 5). Light vehicles provide quick services for people within the city.

The relative utilisation of these various urban transport modes has not been studied to any extent except in the Sert Jackson International socio-economic survey of 1978. Then private cars had the highest percentage of journeys made by individuals, 57 per cent, whereas 7 per cent were by bus, 7 per cent by taxi and only 2 per cent by motorcycle. The rest were divided between walking, bicycle, pickup and company car. By purpose 47 per cent of all journeys were domestic, 33 per cent for work, 6 per cent for health and 4 per cent for market. The rest were divided between social visits, mosque and pleasure journeys.

The Road Network Within Jeddah

Transportation is clearly a formative influence in the shaping of a city as well as being created by the city. Correspondingly, the present shape of the city tends to define the transportation problem and, accordingly, to dictate the type of transportation needed and provided.⁽⁴³⁾ The road network in Jeddah can be divided into two categories. First there are the old streets found within the residential

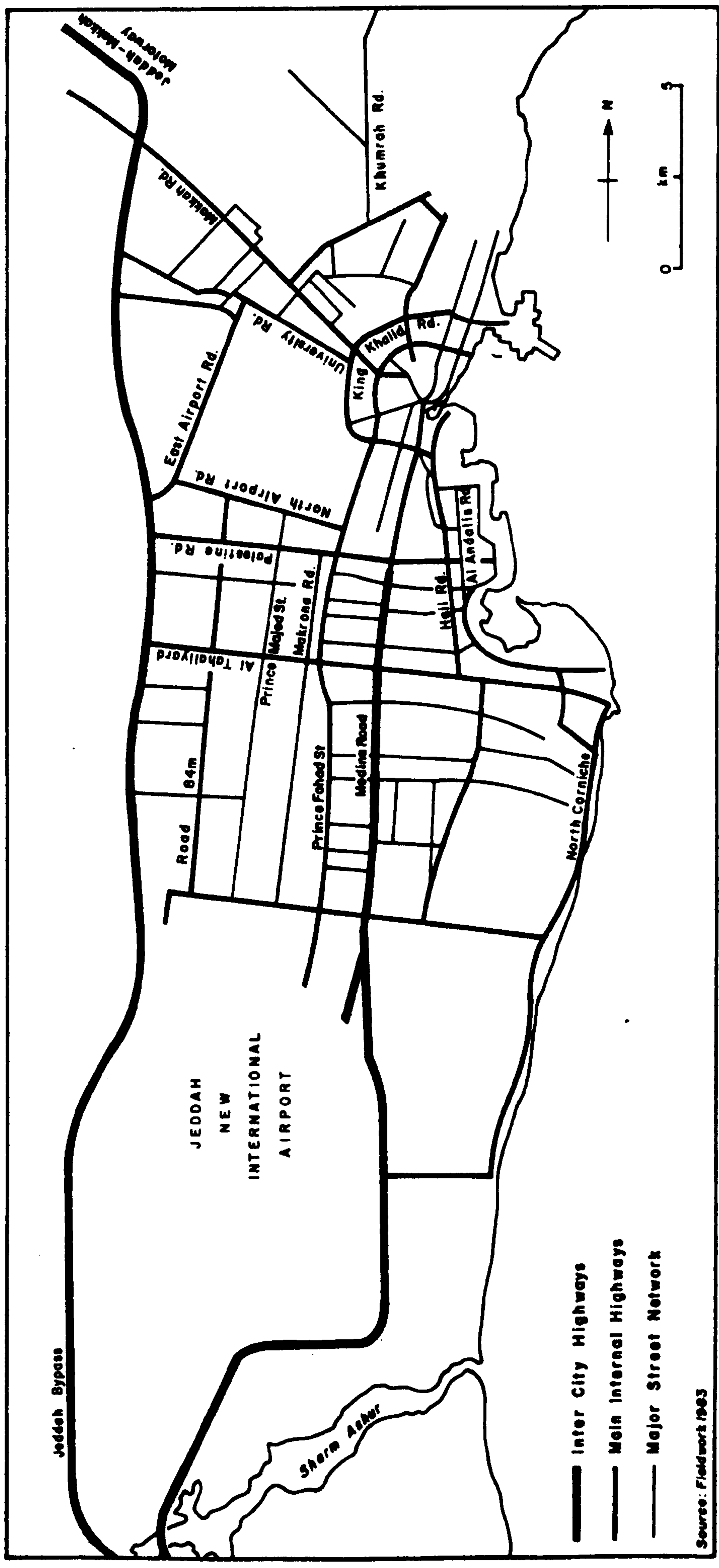
areas of the old town, meandering, lacking pedestrian pavements and virtually unusable by motor vehicles. Secondly there are the modern streets found in the new sections of the city, designed for modern means of transport where the street network can be classified as intra-city highways, main internal highways, major streets and secondary streets - see Figure 8.8.

The intra-city highway includes the northern part of Medina Road and the eastern portion of the Jeddah-Makkah motorway. These two highways were built in the late 1970's to give high speed access from Jeddah to both Makkah and Medina to facilitate traffic movement from one side of the city to another and to reduce traffic congestion in some urban areas. The northern part of Medina Road carried an especially heavy volume of traffic at the weekend because large numbers of people from the city, as well as other neighbouring cities, use this route to reach the main recreation areas (see Chapter 6). This 10.6 km intra-city highway consists of 3 carriageways in each direction, in addition to service roads which provide access to residential areas, commercial and government establishments located on both sides.

The eastern section of the Jeddah-Makkah motorway consists of 3 carriageways in each direction, divided by a central island of 20 m. The length of this highway is 48 km and provided with 12 crossings. It connects with adjacent major streets in order to provide good access to and from neighbouring residential areas. The construction of this highway was of great importance for the city of Jeddah because now pilgrims can be transferred directly from KAIA to Makkah without passing through the city, which helps in the reduction of congestion in Jeddah during the Hajj season.

Main internal highways include the southern part of Medina Road, Prince

Fig.8-8 CLASSIFIED ROAD SYSTEMS, JEDDAH 1982-1983



Fahad Street, Makkah Road, al-Cornich, the Coastal Road, University Road, King Khalid Road, Prince Majed Road, etc. (Fig. 8.8 and Plate 8.1). These roads are main arteries for traffic movement within the city as well as providing the main lines of exit from and entry to the city. One particular main arterial link was built to connect Jeddah port with the regional routes to Makkah and Medinah, viz. King Khalid Street, Medinah Road. This still functions satisfactorily as a type of urban throughway.

The major streets include King Abdulaziz Street, King Faisal Street, Bab Sharif, al-Meina Road, al-Quriat, Makarona Street, Khalid Ibn al-Waleed Street, Mohammed ben Abdulwahab Street etc. (Fig. and Plate 8.2). These are now the chief feeders for the main roads as well as providing for local traffic circulation. The volume of traffic has almost everywhere grown to exceed their unimpeded flow capacity and most of these streets, particularly those located in the old town and inner zone have been modified to fit into one-way traffic systems and to carry heavy traffic in the downtown area. Some of the major streets such as King Abdulaziz Street, King Faisal Street and Bab Makkah Street are not only service concentrations but also carry the heaviest traffic volumes in the city, providing the major exits and entries for the CBD.

The secondary streets are those which normally serve and connect units within residential blocks (Plate 8.3). Although not designed as such they often serve as bypasses of major streets when these are congested.

There has been a great general recent improvement in road construction within Jeddah, particularly during the last five years. Accurate detailed data is not available but it has been estimated that in 1975 the total length of asphalted roads was between 500-600 kms and by



Plate 8.1: Al-Cornich Street: One of the main internal highways.



Plate 8.2: King Abdulaziz Street: one of the major roads.



Plate 8.3: One of the secondary streets.

1982 this had increased to 5,000 kms. ⁽⁴⁴⁾ This can be attributed to a great increase in the expenditure of road construction by both the Ministry of Communications and Jeddah's municipality and to the new regulations which were imposed by the Municipality which required that all streets in newly developed areas were to be asphalted before property sales could be allowed.

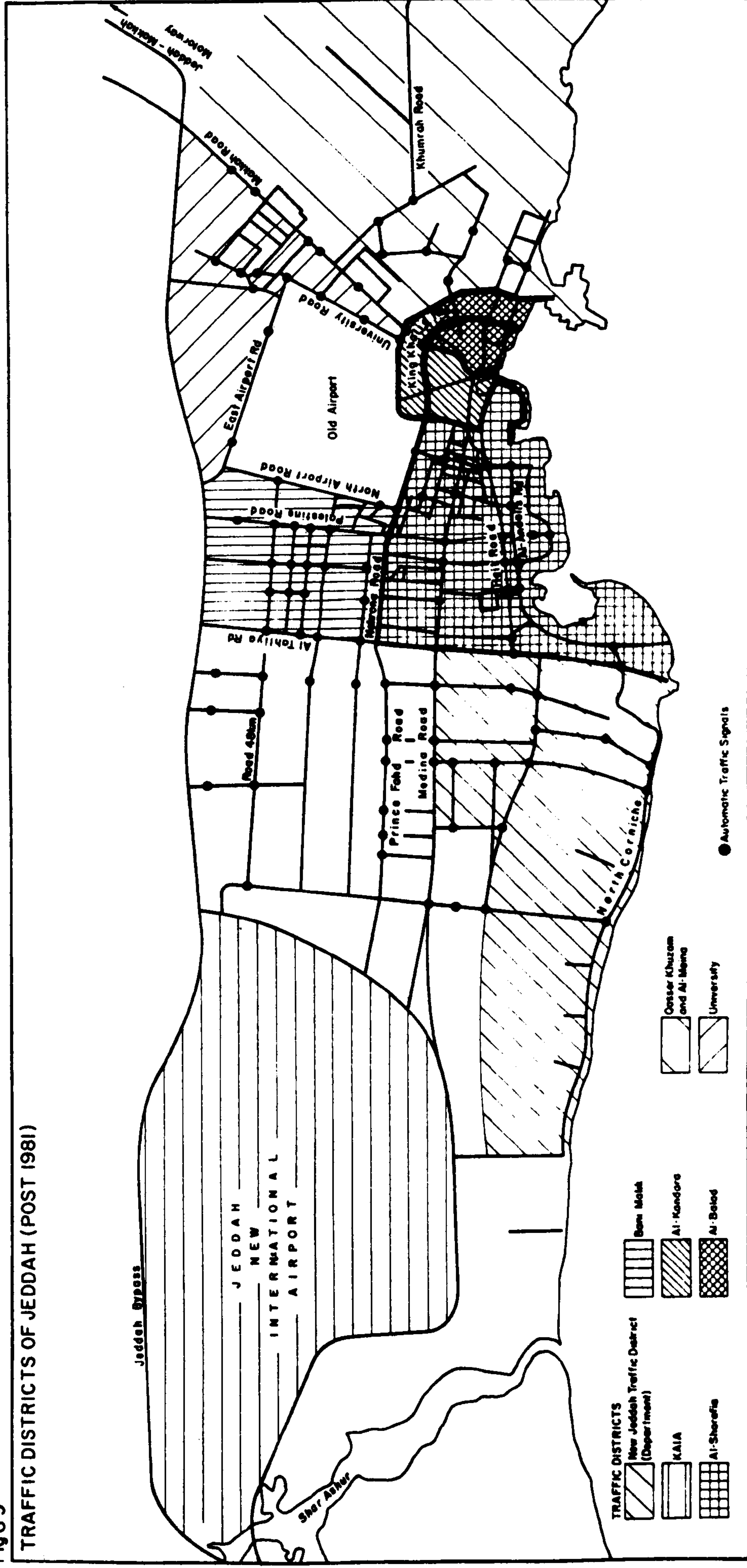
Traffic Movements

It was impossible to conduct a detailed traffic movement survey for this thesis and reliance has to be placed on the pattern of public bus services to give some explanation of the nature of traffic movements in general (Fig. 8.6). According to JMP urban public transport studies ⁽⁴⁵⁾ the volume of traffic entering and leaving central Jeddah during the morning peak period 7 to 9 a.m. had increased from 22,099 passenger carrying units in 1971 to 24,700 in 1976. This increase in traffic represents an average growth rate of 2.3 per cent per annum. In addition to the central area the main commercial streets of other parts of the city such as Medina Road, Makkah Road, Prince Fahad Street, King Khalid Street and others witnessed a large growth in volume of traffic.

In general, there are three peak times of traffic movement in the city, from 7 to 8 a.m, from 1 to 2 p.m and from 5 to 8 p.m. In addition to the factor of location attraction to traffic there are other factors influencing the traffic movement in the city; these include the type of intersection, width of street, type of vehicle and seasonal fluctuations. There are two types of intersection found in Jeddah as in all the cities in the Kingdom, automatic signal light intersection and the roundabout intersection known as Midan. In 1982-83 Jeddah had about 130 mainly automatic signal light intersections ⁽⁴⁶⁾ (Fig. 8.9). Heavy traffic pressure is exerted at some intersections, particularly

Fig 8-9

TRAFFIC DISTRICTS OF JEDDAH (POST 1981)



Source: Directorate of Traffic Police, Jeddah and Fieldwork, 1983



Plate 8.4: One of the large roundabouts with large sculptures in Prince Fahad Street.



Plate 8.5: An example of illegal parking on the streets.



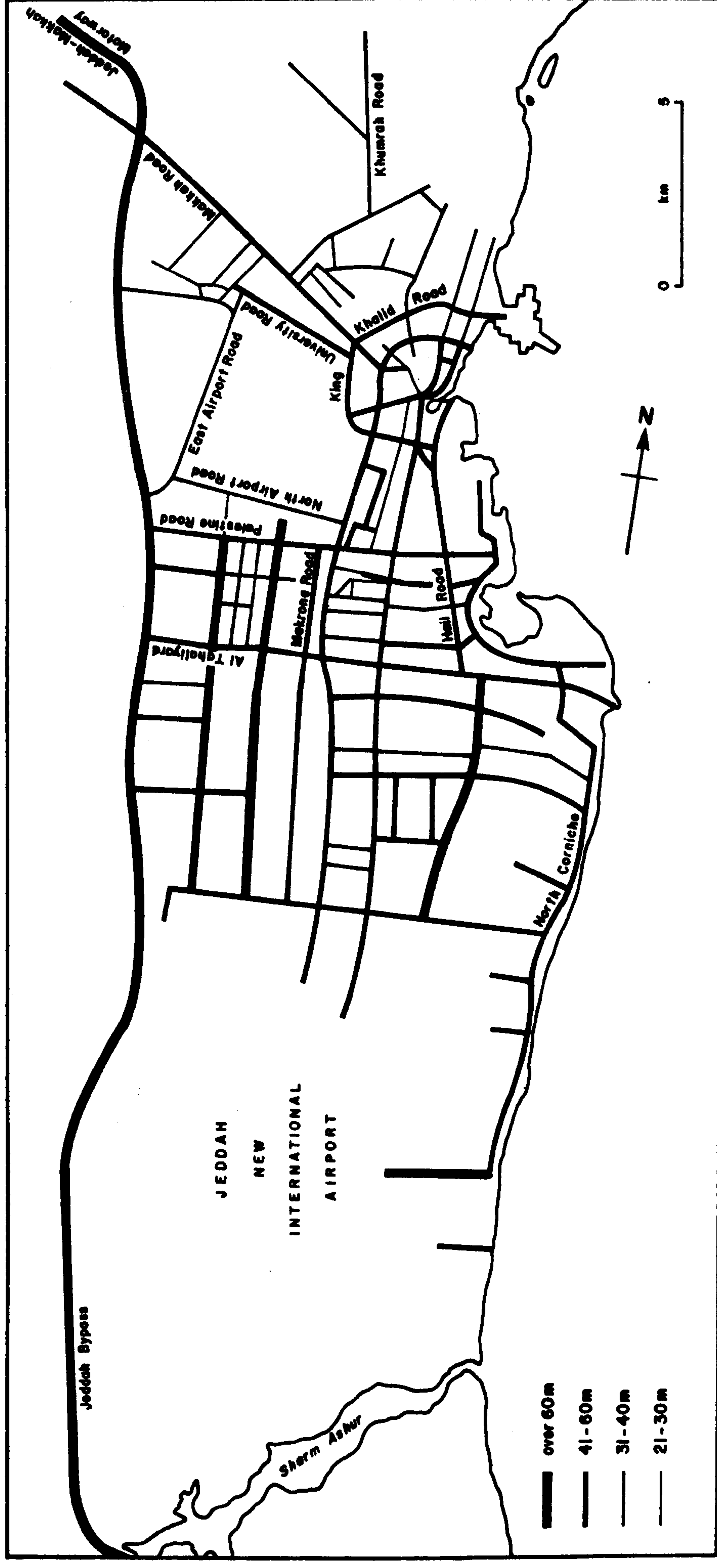
Plate 8.6: One of the two parking places in the CBD which makes a charge.

during afternoon and evening hours, as along King Khalid Street, Prince Fahad Street, Makkah Road, Medina Road etc. Since the traffic flow varies in volume and direction according to the time of the day, more use should be made of variable timing systems. Roundabout intersections are scattered throughout the city particularly on the main roads. The northern part of the city is especially characterized by very large roundabouts each containing large sculptured creations, see Plate 8.4. Traffic flow here is not as fluent as planned which indicates that the purpose behind such roundabouts was more often aesthetic rather than practical. The design of roundabouts regarded as a planning matter outside the scope of this thesis is clearly frequently faulty.

The width of streets in relation to vehicle size is worth noting because of the frequency of changes in width along many route alignments giving rise to congestion and lowering traffic carrying capacity, particularly near and in the CBD. (Fig. 8.10).

Seasonal traffic peaks occur in Jeddah mainly during the Hajj season and the month of Ramadan. As mentioned earlier in Chapter 6 Jeddah is not only the main entry for foreign pilgrims but 27 per cent of resident pilgrims also pass through or start from Jeddah on their way to the Holy Areas. In 1978 these latter totalled more than 720,000 pilgrims, most of whom passed through Jeddah during the two week period immediately preceding the Hajj and again during the two week period afterwards. The vehicles used to transport these pilgrims were composed of nearly 50 per cent small vehicles (cars, taxis, pick-ups etc.) and 50 per cent large vehicles (coaster bus and the government pilgrim transportation buses), ⁽⁴⁷⁾ and together constituted a very large extra volume of vehicular traffic. The opening of the new airport to the north of the city and the construction of the eastern

Fig 8.10 WIDTH OF MAIN ROADS AND STREETS



Source: Fieldwork 1983

side of the Jeddah-Makkah highway mentioned earlier in this chapter have fortunately now reduced the congestion during Hajj. Traffic movement during Ramadan is also affected by resident and foreign visitors who make Umrah particularly during the second half of the month. During this month the evening traffic from 9 p.m. to 1 a.m. is by far the heaviest. In order to control the traffic movement within the city, Jeddah has been divided into eight traffic districts (Fig.8.9) each concerned with its own traffic aspects, such as traffic movement, traffic flow, intersections and to plan for more fluent traffic as much as possible.

Parking

In general there is a great shortage of parking places in the city, the central area in particular suffering more than any other area in the city because of great demand for parking places both from shoppers and the workers employed in the CBD.

According to Sert Jackson International's socio-economic survey of 1978, the CBD then contained about 4,095 official parking places, far exceeded by the number of vehicles actually parked. During the evening the shortfall reaches a maximum of about 3,000 spaces. The result is uncontrolled parking severely reducing the carrying capacity of the streets adjacent to and within the district, and adversely affecting the commercial attractiveness of the CBD. More than 50 per cent of all parkers stay in the CBD for between 1½ and 2½ hours. The remaining parkers were fairly evenly distributed around this period with the slight majority staying longer. About 75 per cent of all vehicles parked were private cars. The rest were divided between taxis and commercial vehicles. Since then some improvement has taken place in order to increase the capacity of parking places in the CBD. By

1982 there were about 8,500 car parks available in the CBD. (48)
However, there is still a great shortage in the number of parking places since the number of cars has also increased substantially as mentioned earlier in this chapter. In addition to parking places available in the CBD, there are other parking facilities, mainly in the new shopping centres and some government establishments. Even so illegal parking on the pavements of the commercial streets is common (Plate 8.5).

Most of the existing parking places are free of charge and the only two parking places with even a nominal charge are on the Cornich and behind the Saudi Arabian Monetary agency, both in the CBD (see Plate 8.6).

Road Accidents

There are many reasons for the recent increase in the number of reported accidents. Among these are the substantial increase in the number of vehicles, of the population, and the expansion of the built-up area, including the construction of very wide streets (60-100 m) which has led directly to an increase in traffic speed. In addition, the lack of speed limits, particularly on highways, a lack of understanding of traffic laws, a carelessness on the part of drivers and the narrowness of some roads are among other major factors. It is worth noting, however, that the average growth rate in road accidents was much higher in the past than during recent years. For example, 347 road accidents occurred in Jeddah during 1971, increasing to 2,160 in 1975, an increase of 522 per cent in a four year period between 1975-1980, while the average growth rate was only 26.4 per cent. (49) This can be attributed to some extent to the improvement which took place in some traffic signals and intersections, as well as to the adoption of harsher penalties, such as imprisonment or high fines for any traffic law violation. The age of the driver is of great importance, the younger the driver the more

likely he is to be involved in road accidents. This is clearly true in Jeddah where about 56 per cent of the accidents which occurred in Jeddah in 1980 were caused by drivers less than 18 years old. (50) The relatively low price of cars in Jeddah indirectly has an affect on road accidents. For example the price of a popular car in Jeddah in 1981 was SR 21,599, while in Riyadh the price of the same car was SR 24,011. (51) Such a situation stimulates the foreign population, particularly those from poor countries, to buy either new or used cars which are very cheap. Consequently, because of the fact that many foreigners own cars, the number of road accidents has substantially increased as they are not used to driving in a large city like Jeddah. In 1980 foreign involvement in road accidents was 54.4 per cent of the total. (52)

Most of these accidents were caused by small cars (55 per cent), the rest being divided between medium and heavy vehicles. Taxi drivers are also responsible for many of the reported accidents.

Conclusion

It can be seen that all transportation media were ill-developed in the early years of the Kingdom because of financial shortages. Recognizing the crucial infrastructural role of an efficient transport system, the state, as soon as it became able to do so spent heavily on internal transport development, and the indices used in this chapter show clearly the degree of progress which has been made, especially since the mid 1970's.

The significance of Jeddah both as the main entry point for pilgrims and as the main commercial port for Hijaz for many centuries provided the basis for further growth as the leading national seaport of a unified Kingdom. This led first to congestion and eventually to even greater port expansion.

Jeddah has always been the chief port and transshipment point for sea-land movements. In this context transportation in Jeddah, as with other functions, is concerned not only with Jeddah's own requirements, but also its regional as well as national role. As noted in the port section Jeddah, above all, is an import port and as such will remain pre-eminent, certainly on the Red Sea. Therefore, as the port is the main supply channel for Saudi Arabia carrying the whole range of every kind of import, so to every kind of transport from oil tanker to ordinary pickup is available in the city.

As there is a very little foreseeable export activity, except in terms of crude oil, liquid gas or association with industry, the only developing export ports for decades will be in Yanbu and Jubail in the Gulf, associated with petrochemical industries. Jeddah is most unlikely to develop such activity.

Regarding the linkage of transport with commercial functions, one can observe specific examples of the relationship between them through some large firms who were originally involved in the commercial activities, including wholesale and retail and have then become involved in transport activities through owning shipment companies. So one has horizontal integration in which transport can be associated with other functions.

When it comes to internal transport, there is nothing particular in Jeddah which distinguishes it from any other large and rapidly growing city except here, as in most functions, one notes the effect of the Hajj and its strong seasonal peak demands.

CHAPTER 8

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- (46) Direct Contact with the Engineering Department, Directorate of Traffic
Police, Jeddah Saudi Arabia, 1982.
- (47) Sert Jackson International/Saudconsult (1979) op.cit. p.51.
- (48) Personal investigation, fieldwork 1982.
- (49) Ministry of Interior (1980) Statistical Year book No.six op.cit.
- (50) Ibid.
- (51) Central Department of Statistics (1981) Statistical Year book 1981
Central Department of Statistics,
Riyadh, Saudi Arabia, p.261.
- (52) Ministry of Interior op.cit.

CHAPTER 9

CONCLUSION

Having examined those urban functions of Jeddah City which appear to be most significant from the standpoint of urban geography, and the problems resulting from rapid changes which have affected almost all Jeddah's urban functions, it is now possible to analyse Jeddah in terms of various classic urban models.

Urban Functions and Centrifugal and Centripetal Forces

The dynamic character of the functions of any city has been emphasised by Charles Colby. ⁽¹⁾ He pointed out that the modern city is a dynamic organism constantly in the process of evolution. This evolution involves both a modification of established functions and the addition of new functions. Such functional developments call for new functional forms, the modification of forms previously established, and for extensions and realignments of urban patterns. These developments of function, form and pattern, Colby claimed, are apparently governed by forces, among which two groups stand out. One group is made up of the centrifugal forces which impel functions to migrate from the central areas of the city towards or beyond its periphery; the second group includes centripetal forces, which hold certain functions in the central zone, and attract others to it. The centrifugal forces which actually result in functional migration are the result of two components, namely, an urge to leave and an invitation to come. These forces themselves involve both uprooting tendencies in the central zone and attractive qualities in outer zones, while the centripetal forces focus on the central zone and make that zone the centre of gravity for the entire urban area.

In Jeddah City, as in other large cities, this concept can be

affectively applied to the process of functional development of the city. The CBD, which represents the heart and soul of which Jeddah was and is, being the central zone of a rapidly growing city, continually shows evidence of expansion which took place in all possible directions. The CBD has expanded largely northwards, eastwards and to some extent southwards - it is true also that this expansion was always linked with the overflow of certain functions from the inner zone and by the concentration of other functions in the inner zone. Therefore, these two groups of forces are at work, by which the middle zone and the peripheral zone of the city are affected.

The transfer of certain functions from the central zone to its periphery or outer zones is attributed to the growth of relevant disadvantages in the central zone. These include high land and property values; traffic congestion and the high cost of transportation; difficulty of securing adequate space for expansion; desire of factory owners to avoid nuisance complaints; inability to obtain sites with special qualities needed; and miscellaneous handicaps such as irksome legal restrictions, outmoded laws and the decline in the social importance of certain areas. (2)

The centrifugal tendencies growing from such poor conditions in the central zone are intensified by the attractive qualities to certain activities of the outer zones of Jeddah City. These include the availability of large parcels of unoccupied land which can be obtained at relatively low cost; the presence of transportation services suited to the migrating function; attractive site qualities, particularly for certain functions such as recreation, parks and public gardens; and the control of sizeable areas by developers and municipality alike. Such control, in the case of the residential areas makes it possible to have freedom from smoke, noise, or other nuisances, and the privilege

of imposing a zoning system in relation to the type of occupancy. (3)

Reflecting this changing balance of factors the outer zone of Jeddah city has been characterized by rapid growth in the last decade. Such growth has involved many types of activity, but has been especially conspicuous in connection with the residential, manufactural, commercial and vocational functions. In some cases the growth represents functional expansion or migration from the inner zones of the urban area. In other cases it represents migration to the outer zone of a city of functions previously localized in some sections of the region immediately tributary to the city. In still other cases it represents the establishment in the outer zone of a function entirely new to the city and to the region. (4)

The development of specialised residential functions in the outer zones of Jeddah has been considerable. As noted in Chapter 7 (and discussed further below) this migration towards the periphery however being almost entirely of high income groups, their places in the inner zones being taken by low-income urban incomers. With regard to industry, on the one hand we find that many industries which were located in the inner zone and the adjacent areas migrated to the outer zone to obtain greater freedom for expansion, for operation, for transportation and waste disposal. On the other hand, the heavy basic industries once established have proved relatively immovable and have not expanded significantly in range or scale. The Industrial Estate was deliberately located on the periphery, partly to attract industries from the central and middle zones for zonal planning purposes. It has also attracted some absolutely new ventures. As far as the recreation functions are concerned, it was difficult, if not impossible, for such functions to be developed in the old city of Jeddah as represented by the inner zone. The unavailability of land in the inner zone, except

at extremely high prices, also affected the middle zone areas leaving the outer zone as the only possible location for the development of such functions (Chapter 6). As far as commercial functions were concerned, given the negative aspects of the inner zone in addition to the spatial, and the expansion of the built-up area, many commercial activities migrated to, as well as expanded into, the outer zones. At the same time, commercial and financial functions were strongly influenced by the centripetal forces in urban development which focus on the central zone of the city.

In Jeddah City this zone is characterized by a great number and complexity of urban functions, and by multiple levels of use extending from the lowest basements to the highest floors of tall buildings. As mentioned earlier, land values in such areas are high, in harmony with the intensive use of the land. Such intensive use indicates that the central zone possesses assets or qualities which make it highly attractive for many functions.

Colby suggests five factors which attract functions to the inner zone, i.e. site attraction; functional convenience; functional magnetism; functional prestige; and the human equation. (5)

In Jeddah the inner zone's specific site coincided with the site attraction of the old sea port - the fundamental reason for the existence of Jeddah. It is also true that many functions are located in the central zone, because in this zone they can be carried on more conveniently than elsewhere. This convenience results primarily from the fact that the central zone of Jeddah is the major focus of city transportation which has grown to serve a radial type of expansion, making it the one place where, for example, retail businesses and their customers both minimise the disutility of distance within the metropolitan area. Equally important, transportation links through the arterial motorways and

major roads make the central zone the most accessible to the hinterland region which the city dominates. This to a marked degree makes this central zone the point of convergence and the point of maximum convenience for the whole region. The successful concentration of any one major function in the central zones gives a functional magnetism to that zone, attracting further functions. This in turn encourages multipurpose visits to the central zone. In Jeddah the strength of commercial functions in this zone acts as a magnet attracting financial functions as well as others. Functional prestige is illustrated by the way in which both gold souks and the modern large shops of King Abdulaziz street cluster together. Finally, the human equation includes at one extreme the desire of many low and medium income employees of the centre's service activities to live near their work and at the other a desire felt by others to live close to the various conveniences of the central zone. The presence of the commercial port acted as a centripetal force attracting shipping offices, importing and exporting houses and the like into the central zone. Such establishments add to the complexity of the central zone, and underpin its focal quality. ⁽⁶⁾ In the central zone of Jeddah, as in other large cities with international roles one sees evidence of contact with practically all parts of the commercial world, by transport services, post and telecommunication services of all levels.

Theories of Urban Growth And Jeddah City

Having examined centrifugal and the centripetal forces as major factors affecting the development and distribution of urban functions within the city, discussion now turns to testing the appropriateness of urban growth models to the case of Jeddah. The first model is the concentric zone of Burgess (1923) ⁽⁷⁾ which suggest that the city grows outward from its centre producing qualitatively differentiated concentric zones. In the case of Jeddah City, the pattern of growth, as shown

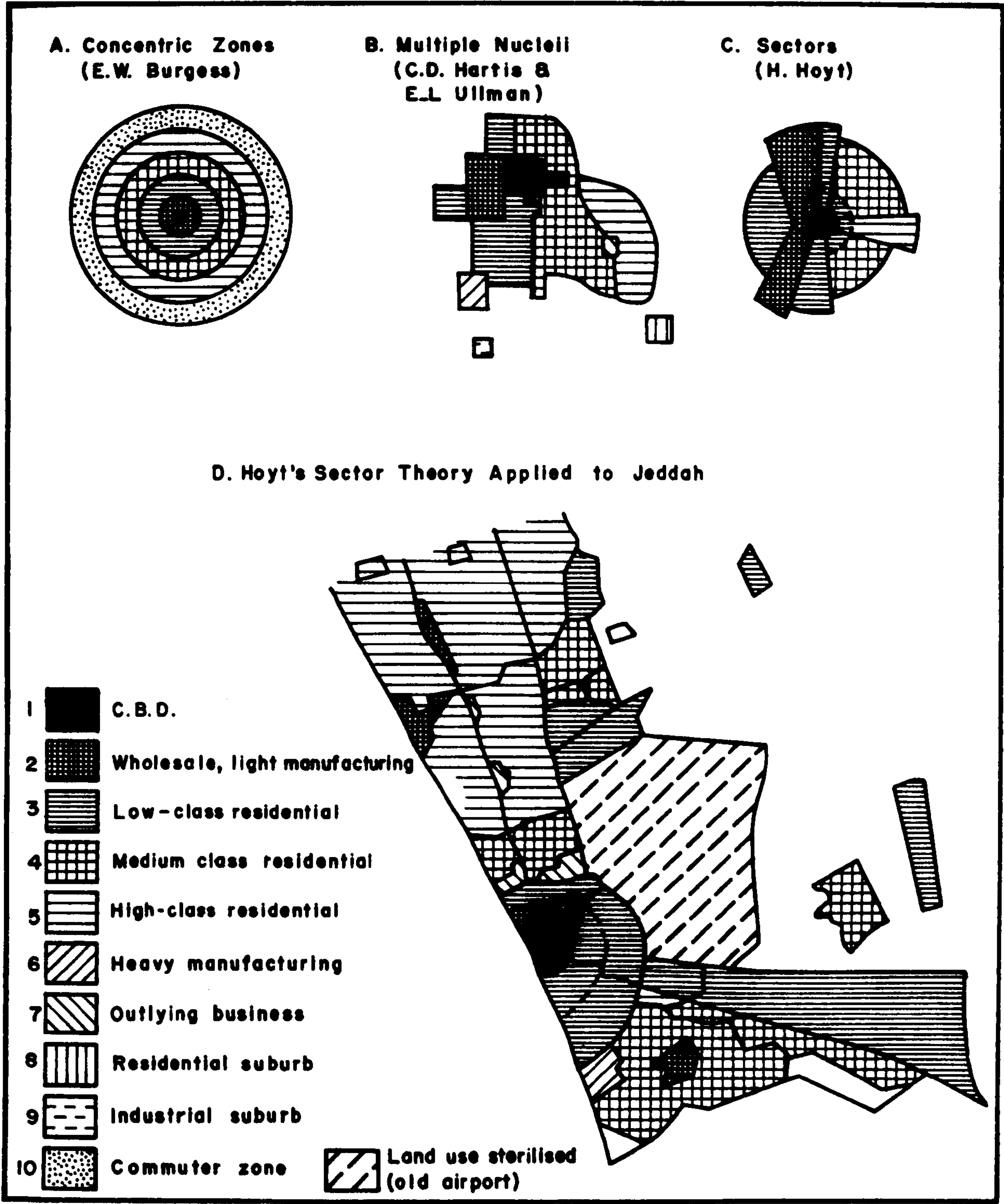
in Figure 9.1, is essentially different except in that wherever there is some spatial organisation there is always some degree of control place. The second model is the multiple nuclei model advanced by Harris and Ullman in 1945, suggesting that cities have an essentially cellular structure, in which distinctive types of land use have developed around certain growing points or "nuclei" within the urban areas.

However, the discrepancies between this model and what is actually observable in Jeddah are very great. As Figure 9.1 shows, the closest correspondence between theoretical and actual urban land use zonation appears with the sectoral model as developed by Hoyt, a model which emphasises the functional and morphological influence of transport. (8)

As appears throughout this study and as summarily reviewed in the previous section of this chapter, central-place theory and centrifugal/centripetal processes as applied to Jeddah's space and functions show the importance of a single central nucleus, around which, and to and from which, all other activities are organised. It is this latter radial sectoral development which appears most strongly during the post-1947 period and which suggests the basis for the following analysis.

Early growth of Jeddah followed in particular the direction of the two major roads within the city and also extending beyond the city, Makkah Road to the east and Medina Road to the north. This appears very clearly if we analyse the present residential structure in terms of urban expansion and zonation. The first of the major classes of housing (see Chapter 7), low-class housing, consists of Red Sea style houses, old traditional houses and new traditional houses (including those located in the squatter areas). Of these types, indicated by No.3 in Figure 9.1), only the new traditional houses were in fact built

Fig.9-1 'Classical' Models of Urban Growth of Cities



Source: See Text.

for that purpose, the others representing once superior dwellings which no longer meet the size, design or locational requirements of the higher income groups. The latter are now generally rented by low income families. This first category housing is found concentrated both in the central area and on peripheral sites - the squatter areas. The second category consists mainly of apartment buildings and old villas which are scattered mainly in the older quarters of the city. These areas can be categorised as medium-class residential indicated by the number 4 in Figure 9.1D. The third category comprised of the newly developed residential areas in the peripheries of Jeddah which are generally filled by new villas and palaces. These latter areas, categorised as high-class residential, are indicated by No.5 in Figure 9.1D. The high-class sectors mainly extend towards the north, especially north-west.

As can be seen from Figure 9.1D, the housing zones observable in Jeddah conform reasonably well to Hoyt's sectoral model. So also does the location and shape of the CBD. However, the CBD in the model is located in the middle and other sectors bind it on all sides, whilst in Jeddah the CBD lies offset on the shoreline giving a 180° neighbouring area in the Red Sea. Secondly, the wholesale establishments in Jeddah are mainly concentrated in the CBD itself and the minor ones are distributed in different locations mainly north and south, Hoyt's sector 2, including light manufacturing establishments in Jeddah is not represented by a route aligned continuous zone but by many scattered locations in addition to the concentration on the industrial estate. Category 6, heavy industry, is not separately identified in the Hoyt model whilst it exists in the city as represented by the Petromin industrial estate south of the city and the cement factory in the north. However, the heavy industry zone in Jeddah is

not the same as number 6 of the multiple nuclei model, for example. Similarly, category 7, outlying business districts is not recognised in the sectoral model but those which are present in Jeddah are conceptually quite different from those identified in the multiple nuclei model. In Jeddah, category 7, outlying business districts, did not generate growth around them but appeared to serve the growth (of residences) which had already occurred.

What appears there is, whilst the land use pattern in Jeddah in many respects differs from the sectoral model, the conceptual basis of both is common; the Jeddah situation is completely different from that portrayed by the first two models. In this context, the growth pattern of Jeddah can be seen to have followed, during the recent decades of rapid growth a unique pattern although the influence of route alignment is clearly strong. One special land use feature is of recent creation and is itself changing. As noted in Chapter 8, Jeddah's first airport sterilised a very large area close to the city centre for all use other than air transport. Since 1982, it has been supplanted by the new airport which will have a similar effect on the northern periphery. Considerable discussion is still taking place on how to use the now vacated large block of land.

The City's Spheres of Influence

Throughout this study it has been found that there is a close relationship between the city and its region and, to some extent, the whole country. As pointed out by Murphy ⁽⁹⁾ each city forms the core of a larger area which it dominates. The combination of influences diminishes with distance from the city until, theoretically, a divide is reached beyond which the combined influences of the various services operating from some other competing urban centre are greater than the

waning aggregate of which the first city is the core.

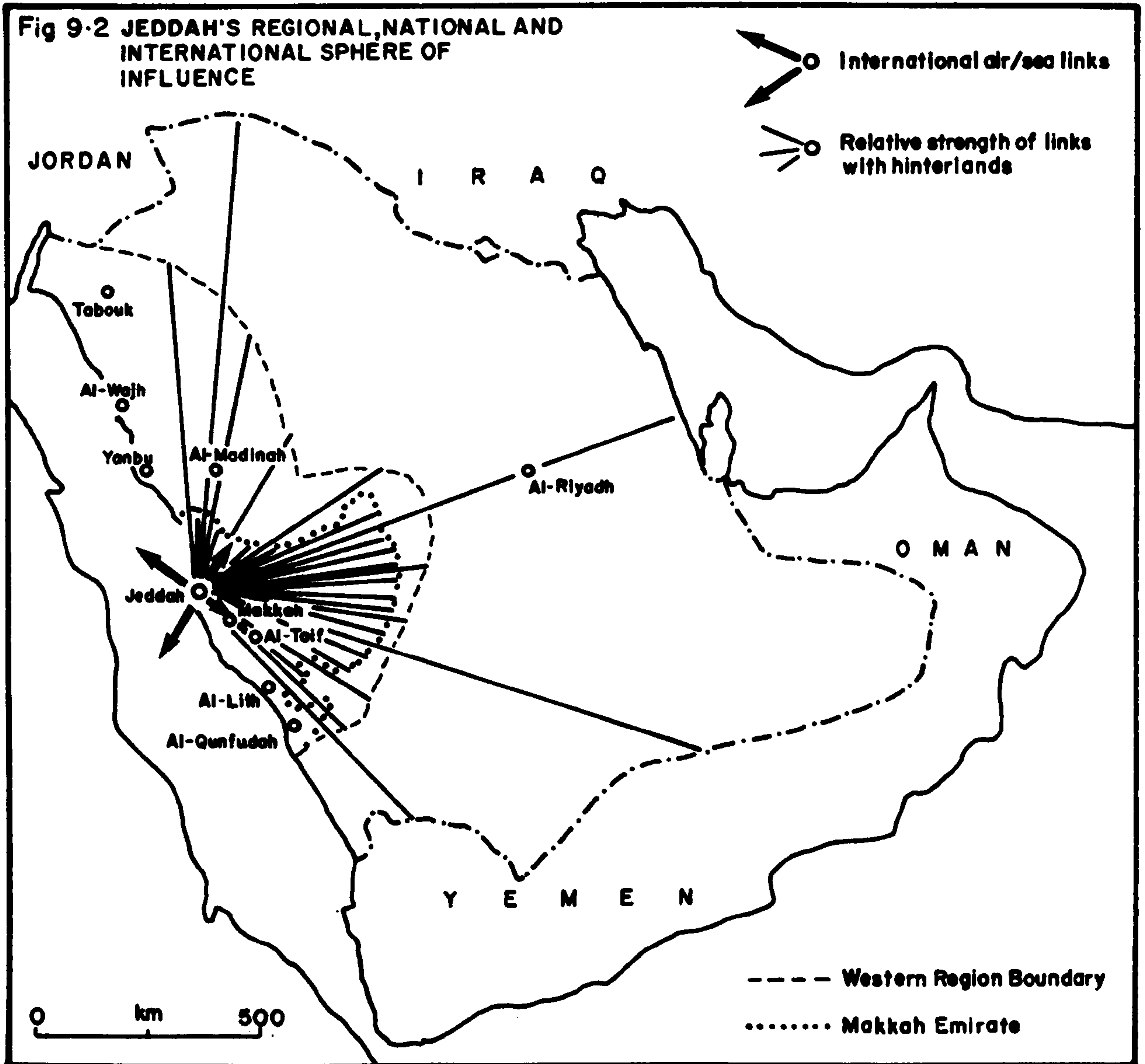
The problem of defining and analysing the functions and limits of the city and the unifying relationships with the surrounding area, is one of disentangling the various functional components and examining the multitude of tributary areas served by, and serving the city. Each group of functions has its particular zone of influence as we will see later in this section. Many functions have no relationship with each other in their geographical extent which is, in any case, often difficult to define, but they all have a common denominator in their dependence on the city. (10)

It is particularly difficult to delimit the regions of Jeddah because of information shortage. Personal investigation and fieldwork findings, together with a variety of indicative data have been used by the author to draw the boundaries of the service regions of Jeddah City as shown in Figure 9.2.

In the first place, one can conclude that the city's influence can be regarded as being on several spatial levels according to the function's zone of influence and the degree of influence of the various services operating from other competing urban centres in the Kingdom. These spatial levels of influence are: the Makkah Emirate, the Western region, the Kingdom, and the extension of some functions beyond the Kingdom's boundaries to some neighbouring countries.

From the point of view of administrative influence, the city of Jeddah is effectively the centre of administrative services offered to the whole population in the Makkah administrative area. Because all the headquarters of these services are located in Jeddah, not in Makkah, the city and its larger hinterland form one local administrative unit. Most ministry branch headquarters, administrative and operational, not only for the Makkah administrative area but for the whole Western region

Fig 9.2 JEDDAH'S REGIONAL, NATIONAL AND INTERNATIONAL SPHERE OF INFLUENCE



Source: Fieldwork 1982-83

(which includes other administrative areas) are located in Jeddah. Because of this, all ministry and agency sub-offices located in other cities and towns of the Western Region have to deal with Jeddah first and their different projects and all other communications with the capital, Riyadh, pass through Jeddah. Given the pyramidal hierarchical structure of government agencies with each major region, in the case of the Western Region, Jeddah City is the connecting link between the population in the Region and the Central government. As the region's inhabitants require to travel to the city to obtain administrative services at a level higher than purely local, these visits tend to become multi-purpose journeys, commercial financial and others, in addition to the administrative services.

The sphere of Jeddah City's influence in the public medical sector varies according to the quality of medical services required and available in the city and in its administrative regions. For example, all small cities and towns in the surrounding areas rely for their middle and higher order medical service on Jeddah, whilst large cities such as Makkah and al-Taif are only dependent on Jeddah for very specialised private and public medical services. The development of well advanced medical services in the city of a higher order and range than found in the surrounding areas is a very strong attraction to the centre and is a very powerful element in extending Jeddah's sphere of influence. It is also true that the introduction of the King Fahad hospital and to some extent the Army and National Guard hospitals has extended the sphere of Jeddah city's influence to cover the whole country and even into some neighbouring countries, particularly N.Yemen. This dominance has particularly resulted from the fact that King Fahad hospital contains one of the most famous and well equipped specialist heart centres in the peninsula. Although the data for the places from

which people obtain medical services from hospitals in Jeddah City is unavailable, it can be said that some hospitals now serve the city, the Western Region, the whole country and some neighbouring countries.

In the private sector, because of the concentration of a large number and range of specialised doctors in Jeddah City, the sphere of influence is even more extensive than in the public health sector, although the number of clients may be smaller. Such specialist services in Jeddah City, are regarded as superior to those available in the Southern, Northern and elsewhere in the Western Regions. It is worth noting here that the sphere of the city's influence through its specialist doctor and hospital function is one of the most far-reaching, as is often the case in developing countries.⁽¹¹⁾

With regard to the influence of Jeddah as an educational centre, since most villages and towns have their own primary and intermediate schools, therefore, the influence at such level is very limited. Only a few villages with no secondary schools have to rely on such services in Jeddah. Special school education on the other hand has a wider influence since it is only available in Jeddah. In the case of university education, the catchment area is not confined to Jeddah's administrative region, but covers the whole country. In addition, students from other Arab and Muslim countries attend King Abdulaziz University.

Regarding recreational links, it is interesting to note that nowadays all town dwellers seek to spend their holidays away from home, and, though their main holidays may be spent further afield, for weekends and short breaks they seek country or seaside resorts near at hand.⁽¹²⁾ In Jeddah the Red Sea coastal area with its attractive locations such as Abhur, sand beaches in the southern part and the recently constructed corniche are considered focal points of recreation,

attracting people from the inner region. This growing movement of people is itself creating new markets for which, in response, new facilities have been created e.g. restaurants, holiday camps etc. making new focal points of attraction in and around the city.

The focal point of the sphere of Jeddah City in transportation is dual; the seaport and the airport. Although Jeddah City was originally built as the port of Makkah, it has developed as the main commercial port of the whole kingdom. As such it has provided opportunities for, and supplied a growing range of ancillary services associated with, transport, on a national scale. Such services, including handling and storage agencies, have led to the expansion of the city's size and status.

The whole country now forms the hinterland of Jeddah port whilst the whole world forms the external sphere of its commercial activities, particularly in imports. Jeddah still also represents the main entry point for pilgrims and other passengers from all over the world. However, it is very difficult to delimit the spatial extent of influence of the port because of the lack of information. In order to identify the general distribution patterns, the Jeddah Port Management have used random sampling distribution techniques on cargo discharged at Jeddah port, but consigned to other cities in the Kingdom. The results which are shown in Table 9.1, show the percentage of total figures by type of cargo and destination. Only 15.8 per cent of DWT cargo is directly consigned to cities other than Jeddah; most of this cargo is for delivery to Riyadh, Makkah and Medina. In this context, one should, however, bear in mind that this percentage only shows a very small proportion of cargo delivered to cities other than Jeddah since large number of shipments are imported and distributed by Jeddah wholesalers; these shipments are included under Jeddah as destination.

Table 9.1 Cargoes Consigned to Cities Other Than Jeddah (D.W.T.) During the Year 1981

Areas	Cement	Livestock	Food	Vehicles	Timber	Steel	Other	Total
Riyadh	1,463 (0.01)	0 (0.00)	321,580 (2.1)	13,352 (0.09)	47,679 (0.32)	34,391 (0.23)	1,150,066 (7.76)	1,568,531 (10.58)
Makkah	387 (0.00)	0 (0.00)	144,737 (0.98)	0 (0.00)	0 (0.00)	27,660 (0.19)	103,347 (0.70)	276,131 (1.86)
Medina	0 (0.00)	0 (0.00)	10,698 (0.07)	4,064 (0.03)	8,942 (0.06)	20,695 (0.14)	76,765 (0.52)	121,164 (0.82)
Taif	0 (0.00)	0 (0.00)	11,512 (0.08)	42 (0.00)	6,696 (0.05)	1,734 (0.01)	49,625 (0.33)	69,609 (0.47)
Tabuk	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	658 (0.00)	5,108 (0.03)	5,766 (0.04)
Damman/Dharan	0 (0.00)	0 (0.00)	3,436 (0.02)	31 (0.00)	0 (0.00)	1,421 (0.01)	81,130 (0.55)	86,018 (0.58)
Al Khobar	0 (0.00)	0 (0.00)	1,172 (0.01)	595 (0.00)	0 (0.00)	0 (0.00)	15,659 (0.11)	17,426 (0.12)
Other Cities	0 (0.00)	0 (0.00)	102,346 (0.69)	5,170 (0.03)	0 (0.00)	1,170 (0.01)	41,912 (0.28)	150,598 (1.02)
Banks	0 (0.00)	2,037 (0.01)	5,286 (0.04)	4,314 (0.03)	20,434 (0.14)	669 (0.00)	10,614 (0.07)	43,354 (0.29)
Total Non Jeddah	1,850 (0.01)	2,037 (0.01)	600,767 (4.05)	27,568 (0.19)	83,751 (0.57)	88,398 (0.60)	1,534,226 (10.35)	2,338,597 (15.78)
Total Jeddah	3,689,856 (24.89)	125,845 (0.85)	4,382,064 (29.56)	493,243 (3.33)	381,041 (2.57)	836,366 (5.64)	2,575,815 (17.38)	12,484,230 (84.22)
Total	3,691,706 (24.91)	127,882 (0.86)	4,982,831 (33.62)	520,811 (3.51)	464,792 (3.14)	924,764 (6.24)	4,110,041 (27.73)	14,822,827 (100.00)

Source : Jeddah Port Management 1982.

as the final destinations are not known to the port authorities. However, as we have seen in Chapter 4 (wholesale section) this influence varies somewhat with the Western Region occupying the position as the largest receiver of shipment (see Chapter 4).

King Abdulaziz International Airport is the only international airport in the Western Region and still the main one in the Kingdom even after the opening of King Khaled airport at Riyadh. In addition, it is the main entry point for air pilgrims from all over the world and these now constitute the majority of non-Saudi pilgrims; such a situation increases the influence of the city where all people leaving the country or arriving into the country in the Western Region have to use this airport. Moreover, other people from different parts of the country prefer to use Jeddah Airport because of the extensive timetable and carriers.

The economic relationships are the strongest ties between the city and its region. ⁽¹³⁾ However, these relationships involve two aspects, commercial and industrial, the commercial being the most significant. The city is the centre of collection and distribution of goods. The distribution of goods is the most important aspect of the commercial activity of Jeddah City, which produces or imports goods to be distributed in the Western Region or in the whole country, through both wholesale and retail trades.

One of the most important indices for measuring the influence of the city over its regions and for measuring the extent of the hinterland region can be derived from data on the city's wholesaling catchment areas. ⁽¹⁴⁾ Unfortunately, in the case of Jeddah, information is extremely limited, and, based on evidence presented earlier in this study and sample fieldwork data, the most that can be done at the moment

is to indicate the following situation. As far as wholesale trade is concerned, Jeddah dominates the Western region, is the most important single centre for the regions to the north and south, and remains of significance for the central region and has some influence on the east. The cost-distance-factor in relation to Dammam is clearly relevant but the strength of Jeddah's wholesaling organisations is probably responsible for pushing Jeddah's influence over the transport cost equal point. There is also some variation as between commodities. Foodstuffs imported through Jeddah even reach some neighbouring countries such as Yemen, Jordan and some Gulf States mainly because government subsidies on imported foods make them cheaper than direct imports to these countries.

The sphere of influence of retail trade is smaller than that of wholesale trade. According to Reilly's Law of Retail Gravitation, the distance and size of the city are the two factors which determine the retail trade area. However, the retail trade area of the city ordinarily tends to be small. People will not travel far for frequently recurring shopping needs. On the other hand, they will come a considerable distance to shop at a large department store. Another characteristic of the retail trade area is based on quality. Customers interested in high-quality goods will travel farther than those interested only in low-quality goods.⁽¹⁵⁾ The retail trade area of Jeddah corresponds with the above mentioned fact, where most people in its administrative region rely on retail services provided by their local markets for lower order services but come to Jeddah for higher order shopping. In Jeddah there is the availability of large shopping centres, larger selections of commodities of better quality. Shopping when associated with multi-purpose visits obviously can also involve lower-order transactions as well and this tends to reinforce the resident population customers for the whole range of retail needs with a sizeable though unknown number of

hinterland residents. The availability and cost of transport are clearly relevant factors.

In general, based on field observation and the writer's familiarity with the area, the short visit or daily journey areas extend about 150 km eastward, 345 km northward and 360 km southward. In this context we should bear in mind that the frequency of visits to the town varies immensely with the distance. However, journeys to shop are sometimes combined with regular journeys to work, another factor used to delimit the sphere of influence of a city.

The journey to work takes two forms : in-commuters, and out-commuters. Because of employment opportunities in Jeddah City, the in-commuters who come from the Region to work in the city, are far more important numerically than the out-commuters, the number of in-commuters, apparently decreasing with the increase of distance from Jeddah City. The best example of this dynamic situation is found in the case of Jeddah and Makkah. Although the road distance between the two cities is very little shorter now by the new motorway than before, travelling time has decreased to a point where it takes little longer than to travel by normal arterial roads from the extreme periphery to the CBD. This, of course, is related mainly to the traffic congestion factor rather than distance factor but this has encouraged people to live in Makkah and work in Jeddah and to continue to use the advantages of both cities. This allows living close to Al-Haram* (Grand Mosque) as well as in relatively cheaper accommodation, whilst on the other hand also benefiting from the services available in Jeddah, which are better in quality and quantity. In general, the daily movement to work has developed substantially in the Kingdom as a whole as a result of the great

* According to prophetic tradition (hadit nabawi) it was narrated that the Prophet *Peace be upon him* said when he left Makkah "Oh Makkah I know that you are the most loved city or part of the World to Allah and to me. Had it not been that your people have driven me out I would not have gone out" Mokhtaser Tafseer Ibn Kathir, p.332.

development in all sectors which has led to the availability of employment opportunities in both rural and urban areas and significant improvements of transportation (see Chapter 8).

Finally, the industrial relationship between the city and its region. As noted in Chapter 5, all public sector factories were set up in Jeddah either to supply the whole Western Region, as in the case of Jeddah Oil Refinery and Petromin Lubricating Oil Company, or to supply the whole Kingdom, such as the Steel Rolling Mill and Grain Silos and Flour Mills. Regarding the private sector and according to fieldwork findings, all the large private sector factories (see Chapter 5) have strong links with its Region and fewer links with the whole Kingdom. About 15 per cent of their sales are distributed all over the country, 42 per cent in the Western Region and the rest distributed within the city. The sphere of influence of small establishments on the other hand is very limited, virtually all concentrated in the city and its immediate surrounding area.

Industries in Jeddah City are not supplied with raw materials from its Region, except some building material (see Chapter 5). Indeed the reverse flow is dominant, Jeddah supplying all imported raw material to the whole Western Region.

Functional Classification of Jeddah City

The various urban functions which promoted the founding and the development of Jeddah City both past and present have been examined and some relevant questions must obviously be: What has been the degree of continuity? have there appeared new functions? what changes in balance have occurred? As pointed out by Howard J. Nelson, everyone is aware that modern cities perform more and more of the services necessary to the functioning of society. There is an awareness too, that these vital

services are not performed in the same proportions by all cities.⁽¹⁶⁾ Therefore, to determine the function or functions of a town it is necessary to compare the various activities of the inhabitants, or at any rate those activities which are directed towards the satisfaction of the external needs of the town. In practice, the only comparison possible between these various functions is one concerning the number of inhabitants employed therein. Thus, an industrial town is one in which the majority of the active population is employed in industry or at least forms the largest single sector; the same rule applies to commercial, administrative and tourist towns.⁽¹⁷⁾

However, as Harries points out, all large cities are multi-functional. The classification of 'manufacturing' does not imply the absence of trade for example. There are all shades of gradations between and among the types proposed, and some cities are borderline. The differences between classes of cities based on function is, in other words, relative rather than absolute.⁽¹⁸⁾

The most widely quoted example of the studies based on the principle of statistical description of functional classification of cities is that put forward in 1943 by Chauncy D. Harries in which a functional classification of the cities of the U.S.A. was outlined. Eight classes of towns were recognized : manufacturing, retail, wholesale, transport, mining, university, resort and retirement, and diversified. A more fully developed and more logical scheme based on statistical analysis is that of H.J. Nelson, who in 1955, set out a service classification of American cities. Nelson poses the question, How large a percentage of the labour force must be employed in particular services to make the performance of the service far enough above normal to warrant separate classification? ⁽¹⁹⁾

Here the main features of both classifications are employed, in part to try and overcome the difficulties created by a shortage of detailed data and time-series data. For example, figures shown in Table 9.2 represent only the numbers of the labour force in the private sector. Accepting the inaccuracies, this breakdown does allow a first appropriate functional classification of Jeddah City.

Table 9.2 Number of Private Establishments and Total Employment
By Economic Activity, Jeddah 1981

Economic Activity	No. of Establ- ishments	%	No. in Employ- ment	%
Total	28,651	100	221,975	100
Agriculture, etc.	152	0.5	409	0.2
Mining & quarrying	9	0.04	741	0.3
Manufacturing	3,820	13.3	35,762	16.1
Public Utilities	90	0.3	3,547	1.6
Construction	1,009	3.5	53,498	24
Wholesale/Retail	16,026	56	56,717	25.5
Transportation	2,119	7.3	38,316	17.4
Finance	171	0.6	4,456	2.0
Community, Social & Personal Services	5,255	18.3	28,529	12.9

Source : Central Department of Statistics, Summary Results, Census of
Private Establishments

From this data one can classify Jeddah primarily as a commercial city. If finance is added to commercial activities Jeddah then appears as the pre-eminent commercial and financial centre not only in the Western Region but in the whole Kingdom. In this context and according to a survey published in 1983 ⁽²⁰⁾, employment in the three cities of

Riyadh, Jeddah and Dammam in 1980, trade and finance in Jeddah accounted for 33.3 per cent of employment, 26.9 for Riyadh and 12 for Dammam. Another indicator of the vigour of trade and finance in the city is the trend in the number of telephone connections - see Table 9.3.

Table 9.3 Number of Telephone Connections

Year	Number
1971	2,700
1972	5,700
1973	19,000
1974	28,600
1975	39,400
1976	45,100
1977	47,400
1978	49,400
1979	51,400
1980	65,650

As shown in Table 9.2, construction represents a large proportion of the total employment, however, this is only an indicator of the general construction boom taking place everywhere in the Kingdom.

In a commercial and financial centre such as Jeddah one could also anticipate the presence of a very large supporting service sector (transportation and community, social and personal services) of the type that would normally be found in a large city. It is particularly large in Jeddah, perhaps showing the high effective market demand for goods and services by a wealthy and prosperous population. For example if the local population can support 9,777 personal domestic employees

then one would expect a high demand for other services also (health, education, transportation etc.).

Employment figures for manufacturing may seem very considerable in total numbers, but as we have seen in Chapter 5 on average, workers per establishment number fewer than 10, totally unlike what is happening in Yanbu or Jubail for example. Jeddah can not then be classified as an industrial city, partly because the local physical resources base is very limited (see Chapter 1). Even more important has been the impact of oil which in various ways has stifled private sector industrial growth, in particular by permitting, even encouraging a vast growth of imports. Jeddah City has always been, above all, a mercantile importing centre and has now become almost stifled by the inflow of what can be called extremes of wealth. It is not just that Saudi Arabia has become rich but it has become rich in ways which makes it possible for the Kingdom not to worry about the balance of trade. The export of oil, which is nothing to do with Jeddah, has produced a consumerism and a capability of paying for imports. If import business is vigorous and profitable in Jeddah why should any entrepreneur bother to produce on the spot on a local limited resource base? Why even go to the trouble of local production at all when importing is so easy and rewarding?

There have been some industrial ventures which have been almost entirely State financed and/or for which the State has supplied the capital to try to attract some private interest (see Chapter 5). All these such industrial ventures were set up to supply Jeddah and its hinterland with basic industrial materials for local consumption. However, where national policy has had larger aims, particularly for export, then other locations have been chosen by central planners, i.e. Yanbu in the Western Region and Jubail in the Eastern Region as the only significant exporting ports. Therefore, Jeddah City ultimately

can only be classified as a commercial centre, fundamentally dependent on its port, and also having some limited manufacturing capability. In fact ports lend themselves particularly well to the concentration of functions : on the one hand, they are by definition commercial places, and on the other they attract manufacturing industries by the different kinds of material which they receive. The development of maritime trade has enormously increased the role of large ports as well as the size of the towns they support. ⁽²¹⁾

The Changing Balance of Functions

While Jeddah retained the primary *raison d'etre* as being a centre for commerce and business until about World War II, many functions of Jeddah were essentially supported by the wealth creating activities of the city itself and the people of Jeddah got what services could be supported by the generosity and charity of relatively wealthy members of the urban community. The port and mercantile trade paid for all. Since the late 1940's however Jeddah has experienced a vast enlargement of its functions, many of which are no longer directly supported by the internal local activity of trading and commerce but are paid for by national central government. This is now one way in which the functions of a city can be changed by a change in national economic status. It is clear that if Jeddah was not part of the Saudi national economy it could not have achieved its present size and its present level of functional activity and one problem of analysis is the identification of the different types of process which in aggregate have produced the present functional situation. Utilising the data presented earlier in this thesis, it is possible to separate out the different elements as follows:

First, there is the special relationship between Jeddah and the most holy city of Islam, Makkah. This is itself not a simple matter since,

whilst there have been obvious material, secular, economic and commercial results of Jeddah being, firstly, for the great majority of Moslems the gateway to Jeddah and, secondly, the supply centre for a Makkah which receives the enormous largesse of the richest of all Moslem countries, Jeddah benefits in indefinable ways in status and prestige from this association. One may claim therefore that basic simple facts of regional geographical location (in physiographic and cultural terms) have determined how some functional activities have developed since the dawn of Islam.

Secondly, and inextricably tied up with the first point (through the reasons for founding the city), is the fact that Jeddah is the only really large seaport along the whole eastern coastline of the Red Sea. For a variety of reasons, Jeddah has never had a serious rival to compete with for trade. The port's seatriade has always been dominated by importation, a natural consequence not only of the presence of Makkah in its hinterland but also of the relative resource poverty and harshness of so much of its immediate hinterland. Whatever, therefore, has been the political map of Arabia, Jeddah has always served at least one-third of the whole peninsula and its merchant community has always been far-ranging.

Thirdly, the endogenous activity generated by the exogenous forces outlined above, as in any settlement, in turn has itself to be supported and supplied. The multiplier effects on Jeddah City of such self-generating demands clearly have been greatest when the prosperity and stability of the region and the Arab world was at its highest. The climax of stability came after the creation of the unified Kingdom of Saudi Arabia in the 1920's, whilst the climax of prosperity has built up from the 1950's onward with the rise of national oil-wealth. A useful indicator of the range of associated urban-growth is the trend of demand for electricity since 1970 (see Table 9.4).

Table 9.4

Electricity Demand in Jeddah

Years	Max. Demand MW
1970	49.4
1971	53.6
1972	65.1
1973	79.2
1974	90.9
1975	132
1976	161.2
1977	251.2
1978	348.5
1979	501.7
1980	678.8
1981	864.4
1982	1054.5

Lastly, there is the question of how far the functional activities of Jeddah are supported by the economic services which Jeddah supplies to the oil rich unified kingdom as compared with those functions which are supported by national consumer-oriented "handout" expenditure. The first set of activities are the same in type although far larger in scale as could be found in traditional Jeddah i.e. they were the product of local urban wealth creation. The analogy here is with Dubai of the 1960's and 1970's where municipal and other services were expected to pay their own way. A second set of activities, mainly but not entirely, to do with social service functions has developed quite independently of any question of financial viability. Given the total insignificance of local or national revenue derived from taxation, all such activities represent essentially recycled oil wealth. The analogy here would be with Abu Dhabi of the 1960's and 1970's, an extreme case of oil-based consumerism.

In Jeddah one finds both elements in virtually every type of functional activity. Thus, public sector education and health services which are major employment generators, are wholly paid for by nationally and not locally derived revenue. The vigorous private sectors in both services could on the other hand be said to be supported by locally generated disposable income earned in trade or industry. However, a significant though unknown proportion of that income in fact is the end production of some infusion of national capital at some other "upstream" point in the network of economic linkages. The same is true of manufacturing industry. The public sector industries were established to meet a product requirement, not primarily to be profit-making. The private sector industries on the other hand have to be viable or they cannot survive. However, the conditions determining viability are themselves affected by the availability of capital and many material inputs such as electricity from state-controlled agencies well below free market prices.

In the case of Jeddah, as with other similar urban centres, the degree to which the changing balance of internally and externally created functions is virtually impossible to measure is because of the complete absence of some classes of data and the limitation of others. Already in the 1960's when urban geographers were becoming concerned about potential material for urban study ⁽²²⁾ it became assumed in North America and Europe that certain kinds of quantitative data would always exist. Amongst these were local taxes or rates on property, legally required returns on turnover and other business accounts, full information on ownership and control of enterprises, details of use of public utilities etc. as well as a full range of census information. As has appeared in this study very little of such data available for Jeddah can be found. This is because of the paradox that the national,

regional and local socio-economic conditions which now determine the urban functions of Jeddah can only exist in the absence of those financial and planning controls and regulations which generate the types of data which Western geographers are accustomed to use.

In studies such as this, therefore, it is only possible to indicate indirectly the trend towards functional continuity in Jeddah whilst at the same time noting the strength of sectoral change and also the appearance of some new functions e.g. heavy industry.

In this context, one should bear in mind that the introduction of new functions does not mean that those earlier established have to disappear. Therefore Jeddah for all its vast enlargement of functions, has not lost its original reasons for existence. This is also true in other cities, for example, the university town of Oxford in England and Uppsala in Sweden have thus become industrial centres without losing or weakening their earlier functions. (23)

Jeddah As a World City

From this study one can also conclude that Jeddah City can be classified as a major world city. As pointed out by Peter Hall (24) the world cities are national centres not necessarily of government but above all of trade. Characteristically they are great ports, which distribute imported goods to all parts of their countries. The world cities are the sites of the great international airports. Traditionally, the world cities are the leading banking and finance centres of the countries in which they stand. Here are the headquarters of the trading banks, the offices of the big insurance organisations and a whole series of specialised financial and insurance agencies. Government and trade were invariably the original *raison d'être* of the world cities. Each of the world cities has its great hospital, and its distinct medical

quarter. Students and teachers are drawn to the world cities; they commonly contain great universities, as well as a host of specialised institutions for teaching and research in the sciences, the technologies and the arts. World cities have become the places where information is gathered and disseminated, where books, newspapers and periodicals are published and with them their journalists and regular contributors. The staple trades of the world cities go from strength to strength. Nothing is more notable about the world cities than their continued economic strength.

World cities are great centres of population. But this is not the main issue since the role of the city in its country is the main factor. For example, urban complexes like Osaka-Kobe, Chicago or Los Angeles have a regional rather than a national or international significance.⁽²⁵⁾

However, Jeddah City has now over a million inhabitants and even when Jeddah was far smaller it still functioned in many ways as a world city, not on the same basis as Makkah, but partly because of its very special location in Islamic terms to the holy cities and its great movement of people particularly during the Hajj Season. The second element is that Jeddah in many ways is, and has been over a very long period, a world city in terms of cultural contact between Africa, Europe and the Arabian Peninsula. Its absolute size has always been less important than its functions. This aspect of its world function has somewhat changed in that even greater emphasis now has to be placed on commodity importation. Saudi Arabia is about the tenth or eleventh largest world importing country and in terms of tonnage of goods moved, Jeddah handles over half of that (see Table 8.9). Although Jeddah in other respects would seem to have lost some of its metropolitan importance to Riyadh, nevertheless it can be ranked equal or somewhat above Riyadh functionally. Much of this derives from the degree of

cultural exposure and the very extensive and long worldly experience found in Jeddah. By analogy, Karachi was and still is the commercial heart for Pakistan, even though its apparent disadvantages were great. It does not lie in the richest region of Pakistan, that is the Punjab, nor is it geographically highly centralised, in fact Karachi lies at one extreme end of the country. But Karachi was in a sense rather like Jeddah, a port, but something more than a port, a port that also built round it all the support activities which come out of trade. Even now, with Islamabad the capital and Rawalpindi the heart of the interior, Karachi still retains its old functional supremacy. The port in each case has acted as a centre for exposure and contact which over time produces a cosmopolitanism and a superior degree of sophistication.

Jeddah in this sense can be included in the ranks of the metropolitan cities which, as emphasized by J.B. Carnier and G. Chabot,⁽²⁶⁾ have the advantage of particularly favourable conditions and acquire a sort of permanence which allow them to triumph over time.

"They are their own heirs. Carthage was destroyed, but its resurrection was assured; at Istanbul every hole made in the ground reveals the remains of an ancient city, and is full of history. There gigantic towns and others have a strange power, a sort of predestination, defying time, and finding in every age and in every civilisation a new reason to prosper."

Finally, one can say that Jeddah will exist as a city of major importance in the world for at least as long as Makkah exists.

Functional Deficiencies and the Future

Given the very high pressure of the continuous and rapid growth of population on the functions which serve the population, there are some areas where there are notable deficiencies. These are : health facilities and education (where some of the gaps are filled by the private sector) and public utilities, and in these areas improvements are needed. In those areas where the private sector is able to respond to

market demand i.e. recreation and entertainment including restaurants, hotels etc. there is sufficient supply.

Many of these deficiencies result from more basic deficiencies which lie in population and demographic data. It is at present impossible to draw accurately any meaningful conclusions about the relationship between population and demands for functions and the absence of population base data produces enormous uncertainties into forecasting demand.

As shown in Chapter 3 there has been a great and long-continued influx of expatriate population but this influx is no more than a response to a demand for labour in the Kingdom as a whole and the cities in particular. Therefore, any question of control or regulation can only be seen in the context of national planning and whilst national policy as stated clearly in the Third Plan and as appears from the first outlines of the Fourth Plan contains a desire to reduce as far as possible dependence on foreign labour force; the high demand for labour which goes with development growth is implicitly accepted. The national policy is itself ambivalent and how, in terms of Jeddah and other cities, any reduction in the attraction provided by a high level of activities can be achieved is not clear.

The spatial distribution of functions usually dealt with by urban morphologists and urban planners, is not the central concern of this thesis. Nevertheless, the way in which the various functions have developed and their changing relationships to each other have led to the spatial segregation of some functions. For example, one type of residential function has become associated with high income groups with high effective demands in the northern part of the city. Other groups with low income are associated with unplanned settlements. Such qualitative segregation was not normally found in traditional Arab

cities and its appearance, together with its overtones of explicit social differentiation, is a matter of concern.

While the CBD still retains its multi purpose activities, the development of Jeddah Industrial Estate on one hand, quite separate from major industrial plants such as the cement factory, Jeddah oil refinery etc, has led to the appearance of great discontinuities in what was once a coherent city. This is, of course, a result of the ignoring of the changing balance of functions and the consequences. In both instances more attention needs to be paid to the implications of spatial changes.

Another example of the risk of ignoring the implications of change not only concerns urban planning but also the viability of some of the functions activities in Jeddah. The construction industry, the single largest employment sector in Jeddah, has assumed for the last two decades that there would be a continuous and rising demand for housing even though there might be a changing character of that demand, as shown in Chapter 7. What is clear, however, is by 1982 that the scale of construction of housing, particularly of some types such as apartments has exceeded the demand leading in many areas to empty and unoccupied apartments. At the same time, as has been noted, there is still a shortage of other types of accommodation. In terms of this study this is very important because the questions which must be asked include whether the strength of the construction industry in Jeddah is now going to decline, if the slowing down of housing demand is something which will not only affect the construction industry but also the import level and the employment level, or whether this is only a temporary recession which is not reinforced by the deliberate national reduction of oil exports. Here more careful studies are needed.

Lastly, there is no overall national policy regarding the growth of the functions of the different urban centres. For example, there is a policy to establish Jubail and Yanbu as industrial cities, but the consequences of such a decision have not been considered. For instance, how will the growth of Yanbu as an industrial city in the Western Region affect Jeddah in terms of its port activities and its industries? Therefore, long-term studies of the affect of the changing balance of functions should be reviewed in order to avoid any future imbalance. These studies should not be restricted to the Western Region but should be extended to a national strategy which would provide a long term socio-economic background to the now accepted Five Year Plans.

One striking feature which emerges from this study of Jeddah is this. So far, whether as a regional or national urban centre or as a world city, Jeddah has had the vitality to respond to a variety of growth opportunities over the centuries, and also the vitality to survive lengthy periods of stagnation. All this was without any conscious planning, when the city's fate was more or less in its own hands. Today the city's life is determined by distant national and international agencies and decisions, and the level of its total functional activities is far higher than can be justified by its own wealth-creating capability. All this has also happened without any fundamental planning for life in the city or for the life of cities in the Kingdom. Surely it is now time to re-assess and consciously decide what functions Jeddah can best provide at what scale and in what ways for the social and economic good of its inhabitants, its regional hinterland and the Kingdom?

CHAPTER 9

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APPENDIX

The Questionnaire

The main objective of this survey is socio-economic details concerned with the city of Jeddah, which I am studying in order to understand the range of its development. This survey is not related to any government agency and all received data will be used for the fulfilment of my Ph.D. study.

The surveyer would appreciate your cooperation, and hopes to receive precise answers. There are no difficulties in answering this questionnaire and it will only require a little of your time. Therefore, I hope you will answer all the questions in the given space, to that effect, put the sign of (x) for those questions requiring one answer and use the other spaces for the other questions. Finally the author assures you that all the answers will be kept secret and confidential, therefore there is no need to write your name.

Wholesale

1. Location of Establishment
2. Why? easy distribution () closeness to the port () low
 rent () better selling opportunities ()
 general location ()
3. What are the yearly sales, SR (Chose one of the following figures)?
 () 500,000-one million () 2 million - 5 million () over 10 million
 () one million - 2 million () 5 million - 10 million
4. Is the shop/establishment
 a. individually owned () b. family () c. company ().
5. Number of workers - Saudi () Non-Saudi ()
6. Date of Establishment
7. Any investment in manufacturing or processing?
 Yes () No ()
8. Sold goods
 a. imported() b. Saudi product ()
 Please give percentage imported () Saudi product ()

9. Classification by Function

- a. import and wholesale () b. wholesale only ()
c. import only () d. both wholesale and retail ()

10. Type of goods

- Foodstuffs () car and spare parts ()
Cooking utensils () clothing ()
Building materials () ready made clothes ()
Medicine () electrical goods ()

11. Proportion of goods sold to

- Jeddah () Western Region () the whole Kingdom ()

2. Retail

1. Location of Establishment

2. Why? a. better selling opportunities () b. low rents ()
c. location () d. neighbouring on similar activities ()
e. general location ()

3. What are the yearly sales SR (Chose one of the following figures)

- () 10,000 - 20,000 () 100,000 - 500,000
() 20,000 - 50,000 () 500,000 - 1 million
() 50,000 - 100,000 () over million

4. Type of goods

- | | | | |
|--------------------|-----|-----------------------|-----|
| Foodstuffs | () | Ready made clothes | () |
| Greengrocery | () | Shoes | () |
| Gread | () | Both | () |
| Others | () | Textile | () |
| Cars | () | Heavy equipment | () |
| Cooking utensile | () | Furniture | () |
| Jewellery | () | Stationery | () |
| Pharmacy | () | Butcher | () |
| Dairy products | () | Bakery | () |
| Spare parts | () | Confectionery | () |
| Building materials | () | Glass | () |
| Bookshop | () | Electrical tools | () |
| Chickens | () | Electrical appliances | () |

5. The shop
 - a. owned ()
 - b. Rented ()
6. If the shop is rented, how much is the rent per year?

10,000 - 20,000	60,000 - 80,000
20,000 - 40,000	80,000 - 100,000
40,000 - 60,000	over 100,000
7. Number of employees
 - Saudi ()
 - Non-Saudi ()
8. Date of Establishment?
9. In which season are there more sales?
 - Hajj ()
 - Ramadan ()
 - Other season ()
10. In which months are there less sales?
11. The following inquiries are concerned with the building
 - a. Building materials = Al-Mangubi stone () Block () brick ()
wood () others ()
 - b. Number of storeys = one storey () two () over ()
 - c. Total distance in sq.m.

3. Manufacturing

1. Date operation began
2. Location and the area which the establishment occupies(sq.m.)
3. Reason for location:

More selling opportunities	()	Availability of labour	()
Availability of raw materials	()	City services and facilities	()
Availability of means of transportation	()	Land value and construction cost	()
Others (please indicate)			
4. Turnover per year
5. How many sq,metres has the factory in area at the date of opening?
and how much is it now?
Number of storeys: one storey () two () more ()
6. Which of the following problems have been encountered to a significant degree in the lack of skilled labour () low productivity of labour () absenteeism () accommodation ()
7. Is the financial capital Saudi () Saudi and foreign ()

- 8 . Proportion of raw material from the following source
Jeddah () Western Region ()
elsewhere in the () Imported ()
Kingdom
9. If raw material is imported what kind of means of transportation do you use? a. through Jeddah port () b. through airport () c. road ()
10. Number of employees: Saudi () Non-Saudi ()
11. Marketing ... proportion of product sold to :
Jeddah () Western Region () elsewhere in the Kingdom () export ()
12. Can you give a rough estimate of employees travelling to work?
Less than one km () 1 - 5 km () 5 - 20 km () More than 20 km ()
13. What is the main product of the establishment/ factory,.....
.....
14. Does the establishment have allocated accommodation for its labour?
Yes () No ()
15. By what means of transport do the workers travel to work,
a. public () c. establishment ()
b. private () c. Other (please indicate).

4. Banks

1. Functional title of the bank
a. National bank, headquarters () branch () No. of branches ()
b. Saudised bank, headquarters () branch () No. of branches ()
2. What is the advantages of the headquarters being in Jeddah
a. more facilities for commercial activities ()
b. Jeddah as the main commercial centre for the Kingdom ()
c. Others
3. Does the pattern of banking service in Jeddah differ from those of Riyadh or other parts of the Kingdom Yes () No ()
4. What is the percentage of loans or other finance facilities in the following:
a. Commercial activities
b. other activities
5. Does the depositing pattern in Jeddah differ from that of Riyadh in the following:
a. current account Yes () No ()
b. deposit account Yes () No ()

5. Money changers

1. a. Only one centre () b. different branches () Jeddah ()
Inside the Kingdom () outside the Kingdom ()
2. Date of Establishment
3. What is the percentage increase of activity during the Hajj compared to the rest of the year?
4. What is the percentage increase of activity during Ramadan compared to the rest of the year?
5. What is the main currency you deal with? 1. () 2. () 3. ()
4. Methods of determination of currencies price.

لدراسة مدينة جده

تجارة الجملة

ان الغاية الرئيسية للقيام بهذا المسح هو دراسة اقتصادية واجتماعية فقط تتعلق بدراسة مدينة جدة ، التي اقوم بدراستها ولذلك لمعرفة مدى النمو والتطور لهذه المدينة . وليس لهذا المسح أى ارتباط بأى ادارة حكومية مهما كانت ، ولمعلومات المستفاه من هذا المسح سوف تستخدم فقط لاكمال رسالة الدكتوراه .

يقدر هذا الباحث تعاونكم ويرجو تقديم اجابات صحيحة ودقيقة على الاسئلة الواردة في هذه الاستمارة . الاسئلة في هذه الاستمارة ليس فيها صعوبة للاجابة عليها ولا تتطلب من وقتك الا الشيء القليل . ولذا نرجوا الاجابة على كافة الاسئلة في الفراغات المخصصة وذلك بوضع علامة (x) بالنسبة للاسئلة التي تتطلب اختيار واحد ، وتعبئة كافة الفراغات بالنسبة للاسئلة الاخرى . اخيرا يود الباحث ان يؤكد لكم بان اجاباتكم سوف يحتفظ بها سرياً ومجهولة الهوية ولذلك ليس هناك حاجة الى ذكر اسمك .

شاكرين لكم كريم اهتمامكم وعنايتكم ،،،،،،

- ١ - موقع المحل / المؤسسة
٢ - ماهي اسباب اختيار هذا الموقع :-
أ - سهولة التوزيع ب - القرب من الميناء ج - فرص التسويق هـ - رخص الايجار هـ - الموقع العام
٣ - ما هو مقدار المبيعات السنوى بالريال السعودى (اختر احد الارقام التالية)
() ٥٠٠ ٠٠٠ - مليون ٥ مليون - ١٠ مليون ()
() مليون - ٢ - مليون أكثر من ١٠ مليون
() ٢ مليون - ٥ مليون
٤ - هل المحل / المؤسسة
أ - ملك فردى () ب - عائلى () ج - شركة ()
٥ - عدد العاملين :
أ - سعودى
غير سعودى
٦ - تاريخ الانشاء
٧ - هل لك استثمارات خاصة في الصناعة : نعم () لا ()
٨ - هل المواد المباعة : أ مستوردة () ب - مواد سعوديه ()
الرجاء اعطاء النسب مستوردة سعوديه
٩ - التخصص : أ - استيراد وبيع بالجملة () ب - استيراد فقط ()
ج - بيع بالجملة فقط () د - بيع بالجملة والقطاعي معا ()
١٠ - أنواع المواد المباعة من قبل المحل :-
مواد غذائية () سيارات وقطع غيار () ادوات كهربائيه ()
ادوات منزلية () اقمشة () ملابس جاهزه ()
مواد بنساء () ادويه ()
١١ - الرجاء اعطاء النسب لما تباعه للمناطق التاليه :
جدة () للمنطقة الغربية () لحمه منطقة المملكة ()

تجارة التجزئة

- ١- موقع المحل / المؤسسة
- ٢- ما هي اسباب اختيار هذا الموقع للمحل / المؤسسة :
 - أ - فرص التسويق () ب - رخص الايجار () ج - افضلية الموقع ()
 - د - مجاورة التاجر المثل () ه - الموقع العام ()
- ٣- ما هو مقدار المبيعات السنوى بالريال السعودى (اختر احد الارقام التالية)

()	١٠ر٠٠٠ - ٢٠ر٠٠٠	١٠٠ر٠٠٠ - ٥٠٠ر٠٠٠	()
()	٢٠ر٠٠٠ - ٥٠ر٠٠٠	٥٠٠ر٠٠٠ - مليون	()
()	٥٠ر٠٠٠ - ١٠٠ر٠٠٠	اكتر من مليون	()
- ٤- نوعية البضاعة :

ما هي انواع البضاعة المباعة فى محلکم :

 - أ - مواد غذائية () خضروات وفواكه () عيش () اشياء اخرى ()
 - ب - ملابس جاهزة () احذية () كلا الاثنين معا () اقمشة ()
 - ج - ادوات كهربائية () اجهزة كهربائية ()
 - د - سيارات خفيفة () سيارات ثقيلة () قطع غيار ()
 - ادوات منزلية () اثاث منزلى () مواد بناء ()
 - مجوهرات () مكاتب () ادوات قرطاسية ()
 - صيدلية () جزار () دواجن ()
 - اجبان () فرن / مخبز () حلويات ()
 - زجاج ()
- ٥- هل المحل :
 - أ - ملك خاص () ب - بالايجار ()
- ٦- اذا كان المحل بالايجار ، كم هو الايجار بالسنة :

()	١٠ر٠٠٠ - ٢٠ر٠٠٠	٦٠ر٠٠٠ - ٨٠ر٠٠٠	()
()	٢٠ر٠٠٠ - ٤٠ر٠٠٠	٨٠ر٠٠٠ - ١٠٠ر٠٠٠	()
()	٤٠ر٠٠٠ - ٦٠ر٠٠٠	اكتر من ١٠٠ر٠٠٠	()
- ٧- عدد العاملين :
 - أ - سعودى () ب - غير سعودى ()
- ٨- تاريخ انشاء المحل / المؤسسة
- ٩- فى اى المواسم التالية تكون المبيعات اعلى
 - موسم الحج () موسم رمضان () مواسم اخرى ()
- ١٠- فى اى الشهور تكون المبيعات اقل

المعلومات التالية تتعلق بالمبنى :
- ١١- ما هي مواد البناء المستخدمة فى بناء المحل .

بلوك () الحجر المنقبي () الطوب () خشب () مواد اخرى ()

عدد ادوار المحل

دور واحد () دورين () اكثر ()

— ما هي مساحة المحل بالمتر المربع ؟

المصانع

- ١- تاريخ افتتاح الشركة / المصنع
- ٢- موقع المصنع / الشركة : والمساحة التي تقوم عليها الشركة متر مربع
- ٣- ما هي اسباب اختيار هذا الموقع للمصنع / الشركة
فرص التسويق () توفر العمالة () توفر المواد الأولية ()
خدمات المدينة وتسهيلاتهما () توفر وسائل النقل () سعر الارض وتكلفة البناء ()
اسباب اخرى
- ٤- مقدار المبيعات السنوية
- ٥- كم متر مربع كانت مساحة المصنع عند الافتتاح
- وكم هي الان
- عدد ادواز المصنع :
دور واحد () دورين () اكثر ()
- ٦- اى المشاكل الهامة الاتية واجهتها الشركة / المصنع بالنسبة للموظفين والعمال .
أ - عدم وجود عمال مهرة ب - انتاجية متدنية من العمال ج - الغياب
د - السكن
- ٧- هل رأس المال سعودى فقط () سعودى اجنبى ()
- ٨- ما هي النسب المئوية للخامات التي تحمل عليها من المصادر التالية :
منطقة جدة () المنطقة الغربية () مناطق اخرى من المملكة () مستوردة ()
- ٩- اذا كانت الموارد المستوردة فما هي وسائل النقل المستخدمة :
أ - عن طريق الميناء البحرى ه - عن طريق الميناء الجوى ج - عن طريق البر
- ١٠- ما هي اعداد العاملين بالمصنع : سعودى () غير سعودى ()
- ١١- التسويق .. ما هي نسب تسويق منتجاتك فى المناطق التالية :
أ - جدة ب - المنطقة الغربية ج - بقية مناطق المملكة د - التصدير للخارج
- ١٢- هل باستطاعتك اعطاء تقديرات تقريبية للمسافة التي يقطعها الموظف /
العامل للقدوم الى العمل .
أ - اقل من كيلو متر واحد ب - من واحد الى خمسة
ج - من خمسة الى عشرين د - اكثر من عشرين
- ١٣- ما هو الانتاج الرئيس للشركة / المصنع
- ١٤- هل لدى الشركة / المصنع اماكن مخصصة لسكن العمال ؟
نعم () لا ()
- ١٥- باى وسيلة ينتقل العمال الى العمل ؟
أ - نقل عام ب - نقل خاص ج - مواصلات الشركة
د - وسائل اخرى (الرجاء التحديد) .

البنوك

أ - بنك اهلي :

المركز الرئيسي ☐ فرع ☐ عدد الفروع ☐
ب - رأس مال مشترك (بنوك مسعودة) :

المركز الرئيسي ☐ فرع ☐ عدد الفروع ☐
٢ - ماهي مزايا وجود المركز الرئيسي في مدينة جدة :

أ - تسهيلات اكثر لاغراض تجاريه ☐
ب - كون جده مركز تجاري رئيسي في المملكة ☐
ج - اسباب اخرى (فضلا توضيح هذه الاسباب باختصار)

٣ - هل نمط الخدمات البنكية في جدة يختلف عن ذلك في الرياض أو المناطق الاخرى
من المملكة نعم ☐ لا ☐

٤ - ماهي نسب التسليف او النشاطات المالية الاخرى في الاغراض التالية

أ - الاعمال التجارية
ب - النشاطات المالية الاخرى

٥ - هل نمط الودائع في جدة يختلف عن نمط الودائع في الرياض وهي :

أ - حساب جاري نعم ☐ لا ☐
ب - حساب توفير نعم ☐ لا ☐
ج - حساب ودائع لاجل نعم ☐ لا ☐

الصيارفه

١ - أ / مركز واحد ب / عدة فروع ج / حدة د / داخل المملكة العربية السعودية هـ / خارج المملكة العربية السعودية
٢ - تاريخ التأسيس
٣ - ما هي نسبة العمل خلال فترة الحج بالنسبة لبقية السنة ؟
٤ - ما هي نسبة العمل خلال فترة رمضان بالنسبة لبقية السنة ؟
٥ - ما هو العملات الرئيسية التي يتم التعامل بها ؟
٦ - وسيلة تحديد اسعار العملات ؟

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